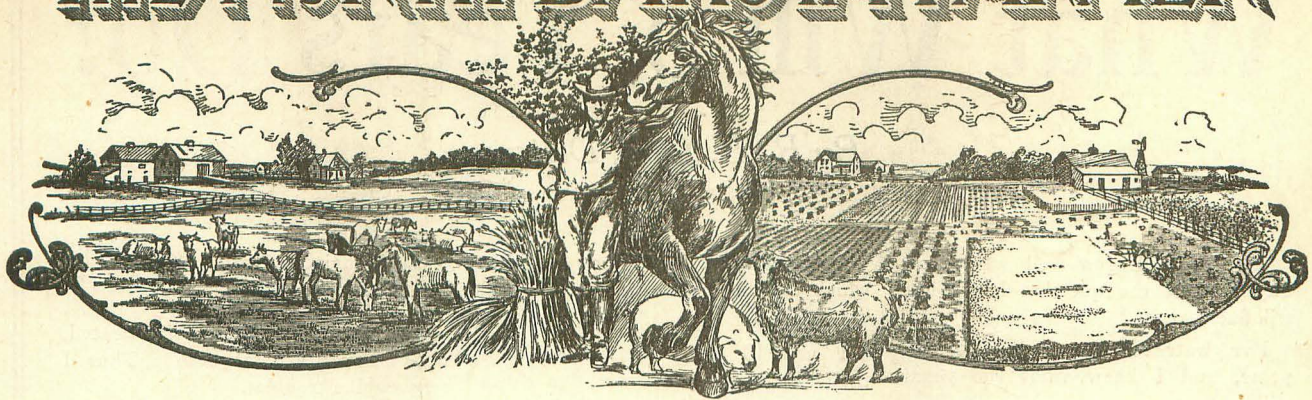


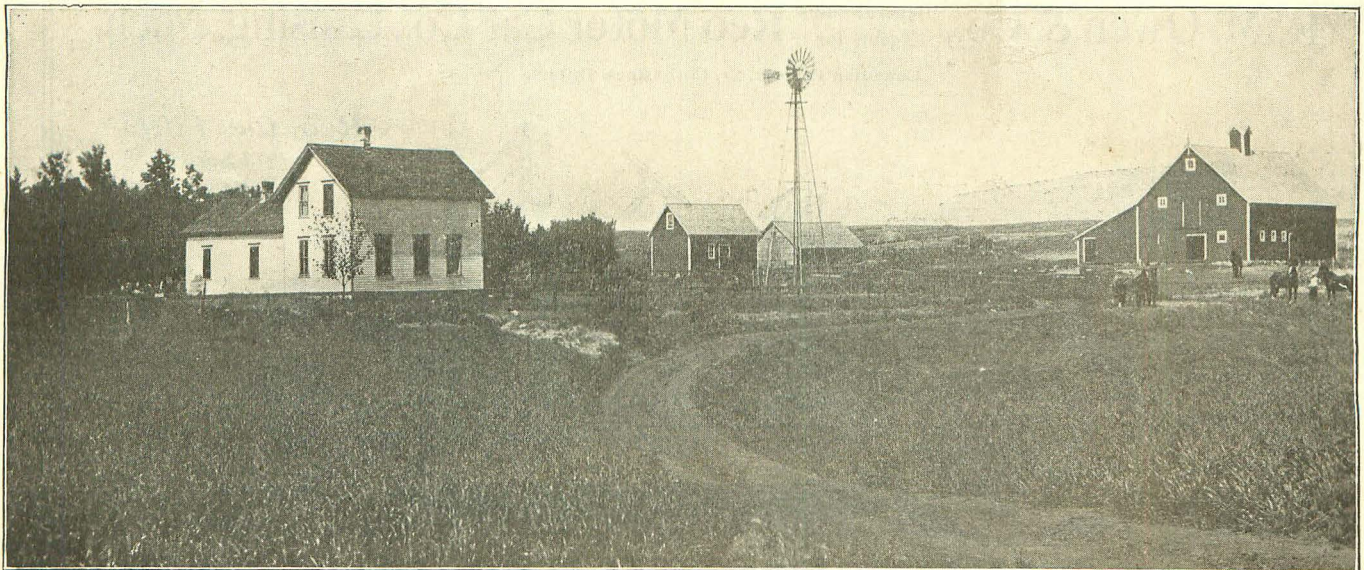
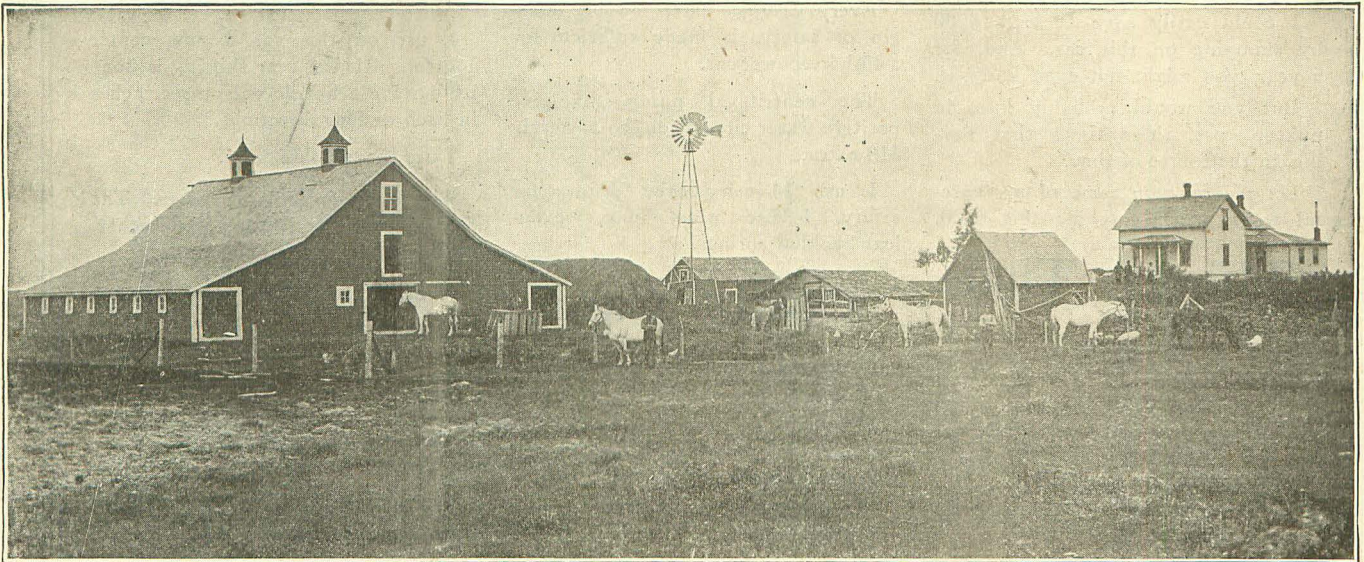
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THE NORTH DAKOTA FARMER



"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Vol. 14 No. 5 Lisbon, North Dakota, November 15, 1912 50 Cents A Year



978.4
N8/4
Graham

Two Modest Farmsteads of Central North Dakota

What Will 5 Years Do?

By R. E. Olds, Designer

Any car will run well when you buy it. But the question is: What will five years do?

I've watched automobiles for 25 years, and I know what the years will do.

And, because I know, I build Reo the Fifth to meet that test of time.

\$200 Extra

I could easily save at least \$200 by skimping on this car. And, for a year, you might not even know it.

But you would probably lose, in upkeep cost, three times that saving, in the course of time.

Let me tell you some of my careful ways which cost me this \$200.

Things That Cost

On Reo the Fifth the tires I use are 34 x 4. On my new model, out Oct. 1, I added 22 per cent to the tire size. I did that because this extra cost will add 65 per cent to the average tire mileage.

I use in this car 190 drop forgings, which average twice the cost of steel castings.

I use 15 roller bearings—11 of them Timken. They cost five times as much as the common ball bearings, but they stand the strain.

I use chrome nickel steel for the axles, vanadium steel for connections, manganese steel for the crankshaft.

Every driving part, for big margin of safety, is made sufficient for a 45-horsepower car.

The centrifugal pump, to give positive water circulation, costs nearly \$10 extra.

I use 14-inch brake drums for safety. I use wide, long, seven-leaf Sheldon springs.

Costly Care

I test my springs to stand 100,000 vibrations.

My gears are tested in a crushing machine, to prove that each tooth will stand 75,000 pounds.

My steel is twice analyzed, before and after treating.

Each engine is tested 20 hours on blocks, and 28 hours in the chassis.

My carburetor is doubly heated, and I use a \$75 magneto. Thus I save engine troubles.

There are fully a thousand tests and inspections applied to every car, so no errors can creep in.

Center Control

I use on this car a new center control. All the gear shifting is done by moving a handle only three inches in each of four directions.

I use the left-side drive.

The body finish is 17 coats. The deep upholstery is of genuine leather, filled with the best curled hair.

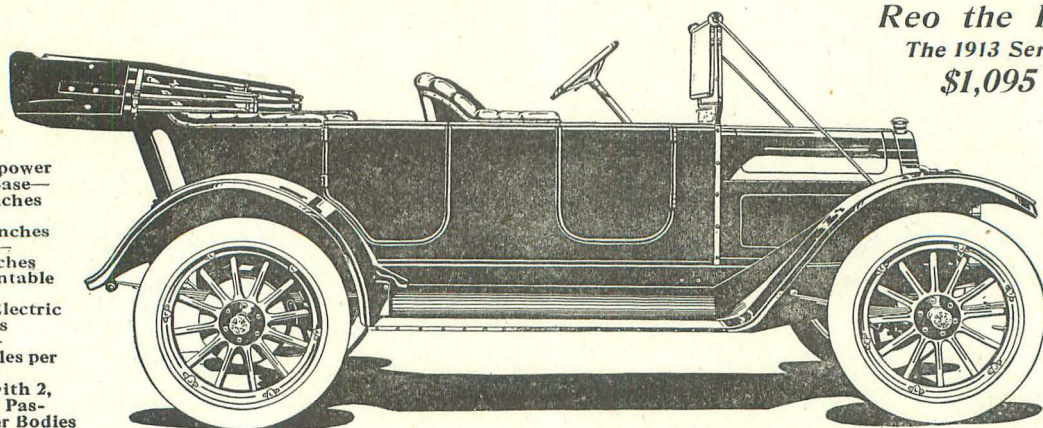
Thus I give you a car which is roomy, exquisite, safe, comfortable and strong.

Men who know best look for cars of this class. I had contracts from dealers for over 10,000 before we shipped the first car of the 1913 series.

Write for our fall catalog, and the name of our nearest dealer.

R. M. Owen & Co., General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**
Canadian Factory, St. Catharines, Ontario

30-35
Horsepower
Wheel Base—
112 Inches
Tires—
34x4 inches
Wheels—
34 Inches
Demountable
Rims
Three Electric
Lights
Speed—
45 Miles per
Hour
Made with 2,
and 5 Pas-
senger Bodies



Reo the Fifth
The 1913 Series
\$1,095

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, gas tank for headlights, speedometer and self-starter—all for \$100 extra.

THE NORTH DAKOTA FARMER

Vol. 14, No. 5

LISBON N. D., NOVEMBER 15, 1912

50 Cents a Year

International Dry-farming Congress Now A World Movement

John T. Burns, Executive Secretary-
Treasurer

Perhaps one of the most significant accomplishments of the Seventh International Dry-Farming Congress at Lethbridge resulted from the attendance of the delegates officially representing various nations which had been invited by the Government of Canada to participate. These official delegates were appointed by their nations ad referendum, and within the next few weeks there will be in the possession of the governments the official report which will contain the observations of these delegates, some of whom were sent long distances to study the work of the Congress and learn further of the wonderful development of the system of agriculture represented in the dry-farming propaganda.

The government of Victoria and New South Wales, Australia, were officially represented by the Honorable Niel Nielson, trade and immigration commissioner of New South Wales, at present located at San Francisco, Calif.

Argentina was represented by Senor Joaquin Granel, an officer of the Ministry of Agriculture at Buenos Aires.

Mexico sent Sr. Ing. Lauro Viadas, chief of the division of agriculture of the Department of Fomento, Mexico City, and Dr. Romulo Escobar, formerly president of Mexico Agricultural College and now director of dry-farming experiment work for Mexico.

China was represented by the Honorable En Lung Hsieh, chief of the bureau of publications of the Department of Agriculture and Forestry of the new Republic of China, who came direct from Peking, China, with an exhibit of dry-farmed products and who returned to Peking immediately after the convention.

Persia was represented by Mirza Ali Kuli Kahn, charge d'Affaires of Persia at Washington, D. C.

India was represented by the Honorable

Lieslie C. Coleman, director of agriculture for Mysore State.

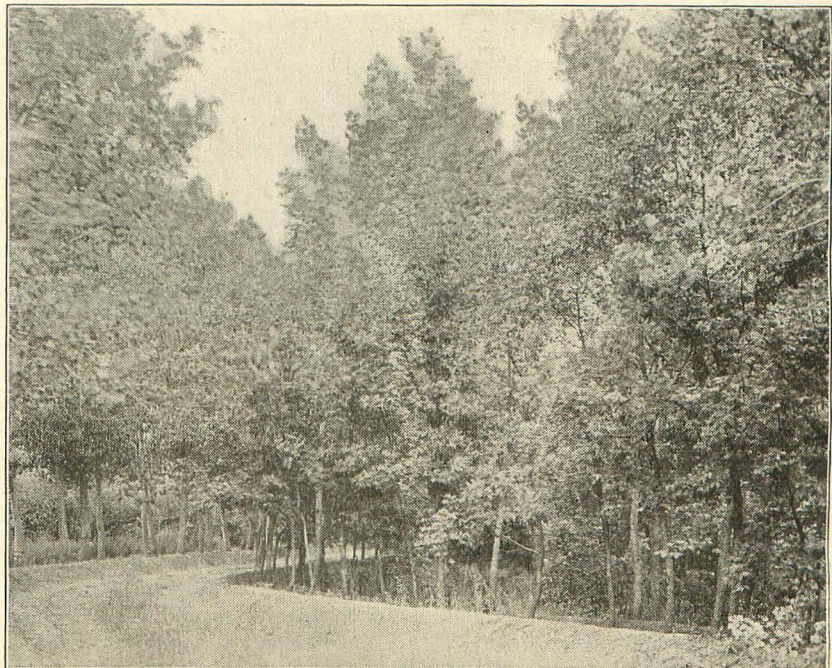
Italy was officially represented by Chevalier Guido Rossati, commercial attache to the Italian Consul General in New York City.

South Africa was unofficially represented by Mr. S. Rogers of Johannesburg.

Turkey was unofficially represented by Dr. Aaron Aaronsohn, director of the Jewish Experiment Station in Palestine.

Hungary was unofficially represented by Mr. George A. Strasser of Budapest, a proxy of the Honorable Geza Koppely, the Hungarian vice-president of the International Dry-Farming Congress.

In addition to the above there were present Mr. Alexander Aaronsohn of Haifa, Palestine, and Mr. J. A. Rosen, agricultural commissioner of the State of Kkratranoslav, temporarily located in the United States.



Tree Cultivation in the Dry Farming Section, Stark County

The Netherlands was represented by Dr. F. E. H. Groenmann, sent from the Department of Agriculture at The Hague.

Germany was represented by Baron Lochneysen, imperial German consul at Seattle, Wash.

Russia was officially represented by Mr. Alexander Kol, acting imperial Russian agricultural commissioner to the United States.

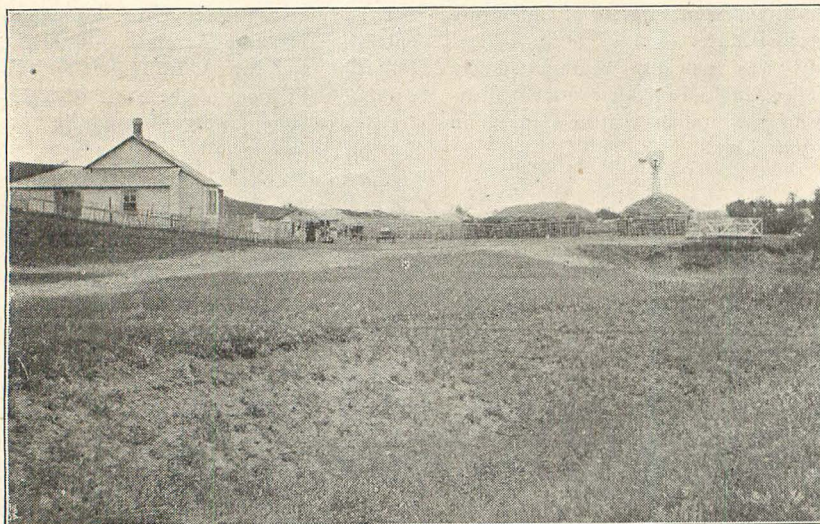
President Taft of the United States was officially represented by Dr. Liberty H. Bailey, dean of the School of Agriculture of Cornell University, Ithaca, N. Y.

The Dominion of Canada was represented by the Honorable Martin Burrell, minister of agriculture of the Dominion at Ottawa.

The various provinces of Western Canada were represented by His Honor

Lieutenant-Governor George William Brown of Saskatchewan, His Honor Lieutenant-Governor G. H. Bulyea of Alberta, the Honorable Price Ellison, minister of agriculture and finance of British Columbia, and W. E. Scott, deputy minister of agriculture of the same province; Manitoba was represented by S. A. Bedford, deputy minister of agriculture; Saskatchewan by the Honorable W. R. Motherwell, minister of agriculture, and A. F. Mantle, deputy minister of agriculture; and Alberta by the Honorable Duncan Marshall, minister of agriculture, and George Harcourt, deputy minister of agriculture.

These international delegates, together with the executive committee and vice-presidents from the United States territory met several times in executive session and discussed the various official phases of the work, and proposals were made by various delegates and officials for further development.



A Ranch Home Near Belfield

In these executive sessions two points of vast importance to the organization and to the world at large were decided upon:

First—that Dr. J. H. Worst, president of the North Dakota Agricultural College, formerly president of the International Dry-Farming Congress, and now chairman of the Foundation Fund, should continue his work during the next 12 months and secure as nearly as possible \$50,000 toward the \$1,000,000 fund which is necessary for the continuation of the work of this Congress. The method of procedure as outlined was to appeal to philanthropically inclined persons thruout the world for subscriptions of from \$25 to \$250 and to issue life memberships for whatever amount might be subscribed, these memberships to be distributed to students of agriculture—worthy young men who might need the information to be secured thru the Congress—the money to be placed in the Foundation Fund, the interest only to be used by the trustees. Daniel Mor-

gan, member of the Board of Governors, of Spokane, led the subscription with one membership at \$25, and a statement that if Mr. Worst would raise a total of \$30,000 within a year he would subscribe \$1,000. Dr. Liberty H. Bailey followed with a personal subscription of five memberships to be distributed by himself to the members of his board, and later several members of the Congress subscribed \$25 each for the fund, which totaled about \$1,500 before the close of the Congress.

The list follows of those from North Dakota who have taken out life memberships: John N. Almen, Grafton, N. D.; Dr. H. J. Worst, Agricultural College, N. D.; C. W. Kelley, Devils Lake, N. D.; Prof. H. L. Bolley, Fargo, N. D.; Brueger Merc. Co., Williston, N. D.; N. G. Larimore, Larimore, N. D.; Hon. W. E. McDowell, Marion, N. D.; and C. J. Lord, Cando, N. D.

Dr. Worst smilingly assumed the obligation thrust upon him and has already

tions will be for the direct benefit of the farmer, leaving such matters as crop reports, statistical information, etc., for the already established organizations operating along scientific lines in behalf of the commerce of the world.

The program of the Congress itself, the Exposition and the very many features of the Congress might be the subject for an extended article, which at this time is quite impossible on account of the lack of space, but the writer desires to say that from every standpoint the seventh annual session of the International Dry-Farming Congress bore out the prophecies that had been made previous to the Congress—that the Lethbridge meeting would establish a new record, and that when the Congress had closed its annual sessions the movement would be known as the greatest, most practical and most powerful agricultural organization in the world.

The combined opinion of the experts acting and participating in the Exposition was that it was the best soil product exhibit ever held on the American continent, and that while some mistakes were made and the program could have been improved upon in spots, no other convention of like nature has ever been held where such perfect spirit of unity prevailed and where the sentiment centralized absolutely in the education of the farmer toward better farming, better home life, and a better commercial treatment of the subject of agriculture.

AGRICULTURAL CO-OPERATION FOR OBTAINING CREDIT

Abstract of address by Dean H. C. Price of College of Agriculture, Ohio State University, before the American Association of Farmers Institute Workers, Atlanta, Ga., November, 12, 1912.

The subject of agricultural credit is occupying a prominent place in our public discussions at the present time. Our political parties took occasion to emphasize its importance in their respective platforms. President Taft has requested the Governors of the different states to make the subject a special order for their annual conference in Washington in December. In asking the Governors to consider this subject President Taft said "were not the interval so short, my conviction of the importance of this subject would impel me to invite you to a special conference at a still earlier date."

We boast of our modern and progressive American agriculture and from the standpoint of production and particularly in utilizing labor saving machinery we lead the world. But in business methods and especially in our credit systems we rank among the most primitive nations, and are a hundred years behind the most progressive European nations.

begun outlining a campaign thru which he intends to secure results very quickly.

Second—the eventual establishment of headquarters in some centrally located city of the West from which will be operated the international and investigative work of the Congress, with a competent corps of scientific workers, editors and statisticians; the organization of a dry-farming bi-monthly magazine to be issued in the language of every nation under government control and patronage, and the employment of editorial writers in every country for the purpose of assembling the necessary information for the enlargement and carrying out of the propaganda. The Secretary was authorized to present plans in detail to governments within the next few months.

The plan as proposed does not interfere or in any way affect the work of the International Bureau of Agriculture at Rome, but it is contemplated that the co-operation thus to be extended by the na-

Credit is the labor saving machinery, of business. Our manufacturing, mining and transportation industries have long been using credit for carrying on their business, and, if its use were denied them for twenty-four hours, the industries would be paralyzed. Agriculture is just awakening to the fact that it, too, needs credit and can use it just as advantageously as other industries. More intensive systems of farming mean more capital and more capital means more credit. We talk about adopting more intensive methods of farming but it takes capital to do that. We have land to drain, roads to build, labor to hire, commercial fertilizers to buy, if we would increase our production, and it all takes money. There is scarcely a farm today in America, on which the owner could not use more capital to advantage.

Our present system of providing capital for farmers has produced a false impression of what legitimate farm credit actually is. Credit too often means to the farmer simply a mortgage on his property with the possibility of its payment being demanded at a time when he is unable to make it, and then visions arise of a foreclosure, of financial embarrassment and humiliation. Keep out of debt has been his slogan, and, if mortgaging the farm was not exactly a disgrace, it was at least a thing to be avoided if possible. As a result the American farmer has been discouraged on every hand from using the labor-saving machinery term credit.

The farmers of the United States have not appreciated, as yet, the value of organizing to secure credit. In the southern states the cotton crop must be marketed as soon as harvested to meet out-standing loans that the farmers have made at exorbitant rates of interest. The grain dealers thruout the central states know that they will be flooded with wheat and corn just before tax paying time by farmers, who are compelled to sell in order to raise money to pay taxes.

Intensive systems of farming, that must be adopted to adjust American agriculture to present needs, means a larger working capital for the farmer. The European farmer gets twice as large a crop yield per acre as the American farmer, because he spends twice as much capital in producing it. He cultivates better, fertilizes better and he takes better care of his land.

The advantages of the farmers' organizing to sell their credit for what it is worth are not all on the part of the farmer. But for the capitalist seeking a safe investment for his money they offer a security that is always negotiable. Such organizations serve as an economic saving between borrower and lender. The man in America at the present time, who seeks to invest his money in farm mortgages, must seek out such loans personally or thru an agent. The punctuality with which the interest

will be paid, and the loan itself when it falls due, will depend upon the personality of the farmer making the loan. But such is not the case when the loans are made thru a land mortgage association and the investor, instead of lending direct to the farmer, buys the bonds of the association. He then knows that his interest will be paid as punctually as on government bonds, that his security has a market value and can be sold for cash any day thru his bank. The establishment of the land mortgage association and the selling of its bonds on the open market opens up a field for investment that is now practically closed to a large class of investors.

One thing to be emphasized in regard to the success of the European systems is the fact that it has been due largely to the direct oversight that the governments have had over them. Without this government relationship they could not have commanded the confidence of the public. It is hopeless to expect an equal degree of success for similar institutions in America unless they are also organized under government control, at least to the extent that the public will have absolute confidence in their solvency.

PRESIDENT ELECT FAVORS FEDERAL AID IN HIGHWAY IMPROVEMENT

The election of Woodrow Wilson to the presidency of the United States carries with it encouragement to the advocates of Federal Aid in highway improvement. It insures an administration friendly to the efforts of the American Automobile Association and other bodies who are co-operating with it in the work to re-establish the policy of road building as one of the fixed and definite policies of the National government.

President-elect Wilson in many public addresses has voiced his belief in the wisdom of National improvement of means of communication, and particularly of roads, to which he specifically referred in his address at the American Road Congress at Atlantic City, on that occasion saying among other things:

"A nation is bound together by its means of communication; and its means of communication create its thought.

"We must more and more engage the Government in providing the general facilities of the common life. There is no breach in that of any of our older understandings of the functions of government. We have never doubted that the Government had the right to supply these facilities which private endeavor has never been expected to supply. Therefore we are not upon a new ground of theory; we are merely upon a new ground of tactics.

"The question of highways is one of the few great instrumentalities of our public and our communal life with which the

Government is of necessity connected. I see that we must do what we have been backward in doing as compared with other nations.

"I tell you frankly my interest in good roads is not merely an interest in the pleasure of riding in automobiles. It is not merely an interest in the much more important matter of affording farmers of this country and residents in villages means of ready access to such neighboring markets as they need for economic benefit, but it is also the interest in weaving as complicated and elaborate a net of neighborhood and State and National opinion together as it is possible to weave. It is of the most fundamental importance that the United States should think in big pieces, should think together, should think ultimately as a whole, and I feel in my enthusiasm for good roads something of the old opposition that there always has been in me to any kind of sectional feeling.

"I believe that it is the proper function of the Government to see to it that the extension of all the varied modern knowledge about the characteristics of different soils, ought to be so extended, so carried everywhere to the farmer as to build up by the aid of the Government this thing that feeds us, and ought to continue to feed the world, and whenever you speak of that, whenever you increase what the United States is doing, you must immediately increase the facilities of the United States for handling what it has made after it has made it. You cannot rationally increase the prosperity of this country, without increasing the road facilities of this country."

In view of these expressions, the feeling among Federal Aid advocates is that there should be little delay in obtaining from Congress the adoption of a comprehensive and intelligent plan for National participation in the good roads movement on a more extensive scale than has heretofore been contemplated. The beginning of President Wilson's administration will be signalized by the assembling at Washington on March 6 and 7, 1913, of the second Federal Aid Good Roads Convention under the auspices of the A. A. A. It is believed that this occasion will mark the beginning of a new era in National economical progress.

ADOPTS NEW SEED LABELS

Every year the Department of Agriculture sends out small lots of new plants and seeds introduced into this country with the idea of growing them in some corner of the United States. These plants and seeds have borne heretofore labels of paper or wood, but Dr. David Fairchild, chief of the office of foreign plant introduced, has devised a plan that is unique. The Department will print waterproof plant labels such as will be new to nurserymen and experimenters. They are printed on celluloid and, besides the name of the

plant, there is a 50-word description of the plant, the conditions under which it grows and the nature of its uses. There are about 400 varieties of plants to be tried out this year, running from 10 to 500 specimens each. The plants are collected by agricultural explorers in all parts of the world. Many interesting and important plants are to be distributed, among them being a lot of drought-resisting poplars, collected in the Russian Caucasus and the interior of Siberia. If they do as well in this country as in their native haunts they will be of immense value in the cold tier of northwestern border states where there are now no trees and where there never has been any tree found that would grow.

Mention the NORTH DAKOTA FARMER

When Writing Advertisers

SEED WANTED

We are in the market for North Dakota grown TIMOTHY, BROMUS and MILLET of all varieties.

Send us samples of any high grade grass seed or seed grain you have for sale, and we will make bid on same F. O. B. your station. WRITE US TODAY.

FARGO SEED HOUSE
 Fargo, North Dakota

Wonderful Kerosene Engine Saves Money Every Minute!

A Startling Success—A Success from the Start

This amazingly light, powerful and durable engine runs on kerosene—just ordinary lamp oil! It is the only engine in the world that does it successfully. Kerosene costs about half as much as gasoline and the same quantity yields one-third more power.

Gasoline prices are rising. Coal oil is getting cheaper. Thus the "Detroit" solves one of the greatest problems that confront the users of engines. The "Detroit" saves

money every minute. It does the work of engines weighing four times as much. It runs equally well on gasoline, alcohol, naphtha, benzine, turpentine, distillate, gas, etc., etc. It is the lightest engine of its horse power in the world—and the very best—bar none. You can get one of these wonderful engines, any size desired, on 15 Days' Free Trial, direct from our great engine works. It is all complete as shipped—ready to run when uncrated.

The Amazing "DETROIT" Gives World's Cheapest Power

The "Detroit" does everything that any engine will do—and does it better and cheaper. It is mounted on skids, for easy handling. It pumps, it churns, it sprays, it saws, it threshes, it grinds feed and does innumerable other things. It will even light your house and barn, when attached to a dynamo. This is the supreme test of smooth-running required of any engine. Only three moving parts. Starts without cranking. Reverses like a steam engine. No cams, sprockets, gears, valves, etc., etc.

We run every engine at the factory, and ship it in full running order. Our guarantee means money back if not found entirely satisfactory.

Thousands Already Sold—Orders Pouring In!

When we startled the country by the announcement that a coal oil engine had at last been perfected, a whirlwind of sales resulted. Thousands of "Detroits" are now in use, and our manufacturing facilities are taxed to the utmost to supply them as fast as needed. They are winning a world-wide reputation for economy and high efficiency. No other engine, at any price, can compete with them successfully.

Try One 15 Days—Fire It Back if Not O. K.

We Will Refund Every Cent You Have Paid Us for the Engine

We are shipping out our engines as fast as applications are received, on 15 days' free trial. Your choice of sizes—2 to 24 horse power, inclusive. We assume all the risk. If for any reason you are not satisfied with the engine, simply fire it back. We will hand your money back that you have paid us for the engine without any "back talk." It is easy to do business with us. Our responsibility is unquestioned.

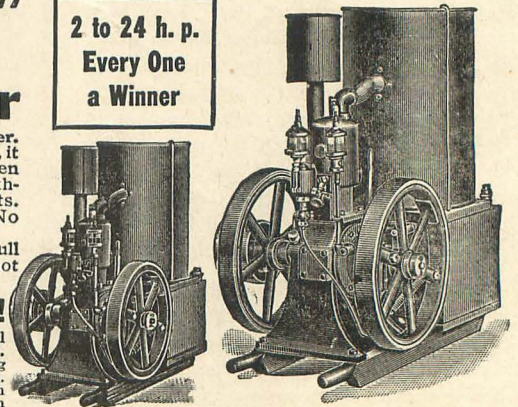
Save \$40 to \$200 on an Engine

We sell the entire output of our great engine works, covering eight acres, direct to the actual users, at factory prices. A clean saving of \$40 to \$200 cash, depending on size of engine ordered. You cannot get this engine anywhere else in the world. Read our Great Special Introductory Offer.

SEND COUPON OR POSTAL

Investigate this amazing engine immediately. Get the Detroit Engine Catalog and see how we have entirely revolutionized the design and construction of engines. The low cost of the engine itself, the economy in fuel, the simplicity and power of the "DETROIT" will surprise you. Sign and mail the Coupon which brings Free Catalog and Special Proposition.

2 to 24 h. p.
Every One
a Winner



GREAT SPECIAL OFFER

To the first purchaser in each locality we offer a special introductory price on the Detroit Kerosene Engine. This offer will not hold good indefinitely. Only one engine sold in a neighborhood at this price. We make this offer because the first engine creates a big sensation and brings additional orders from that locality. This is a grand opportunity. Don't miss it. See coupon.

(57)

DETROIT ENGINE WORKS, 385 BELLEVUE AVENUE
DETROIT, MICH.

COUPON

Free Book and
Introductory Offer

DETROIT ENGINE WORKS

385 Bellevue Ave., DETROIT, MICH.

Dear Sirs: Please send Free Book and Special Introductory Offer on the Amazing "DETROIT."

Name _____

Town _____

R. F. D. _____ State _____

Among Our Advertisers

EARLY SHIPMENTS OF FURS AND HIDES MAKE BIGGER PROFITS FOR TRAPPERS

Big fur and hide dealers who buy direct from trappers and hunters are now asking for early deliveries of pelts. This is the season of the year when buyers begin paying good prices. Funsten Brothers & Co., of St. Louis, U. S. A., the largest firm in the world which deals direct with trappers, is paying good spot cash prices to hunters and trappers who make early shipments of furs, hides and pelts.

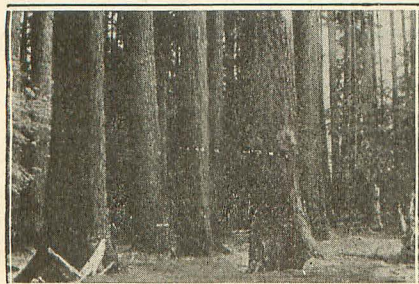
The men who make trapping pay big money invariably are the first to make shipments in the fall. To make the year most profitable to the trapper, shipments should be gotten off as fast as skins are taken. Many hunters fail to realize the largest returns from their pelts because they do not know the importance of frequent shipments.

Most successful trappers—men who make trapping a profitable business—now use a prepared animal bait. Hundreds of trappers have doubled their fur catch and their profits by using Funsten animal baits. This is what makes the sport of trapping lively and profitable.

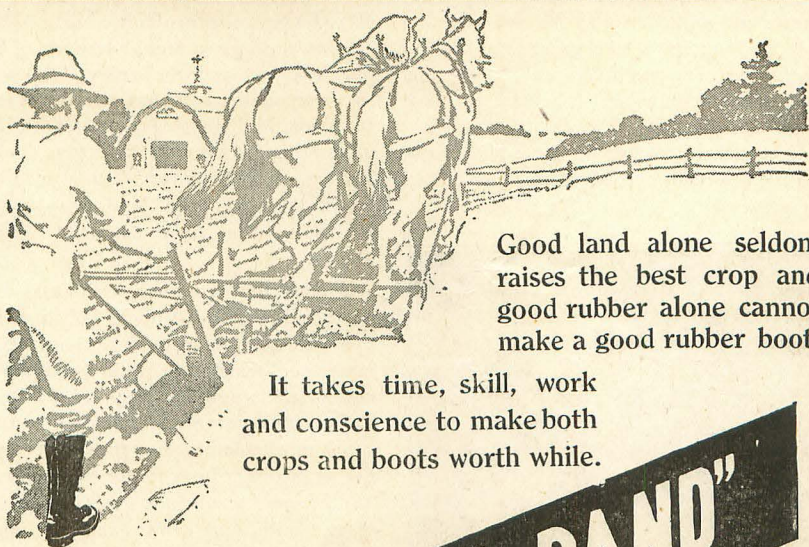
A special service is now offered without cost to men who wish to learn the inside secrets of profitable trapping. Pamphlets have been prepared which give accurate and complete data on fur prices, game laws, trappers' supplies and the best methods of trapping. Men who wish these pamphlets can get them free by writing to Funsten Brothers & Co., St. Louis, U. S. A. These Booklets tell how trappers buy supplies at factory prices.

AN INTERESTING ENTERPRISE

Never before in the history of the lumber business has it been possible for the

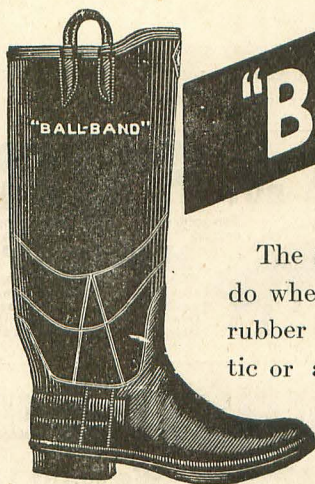


consumer to buy his building materials really from first hands. It is now. A few months ago the Hewitt-Lea-Funk industry on the Pacific Coast, announced that they would eliminate all middlemen,

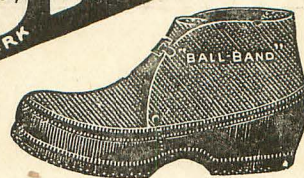


Good land alone seldom raises the best crop and good rubber alone cannot make a good rubber boot.

It takes time, skill, work and conscience to make both crops and boots worth while.



"BALL-BAND"
TRADE MARK



"Ball-Band" Arctics. Four buckle and one buckle. In cold and wet, when you wear good shoes, you will find a "Ball-Band" Arctic keeps your feet and legs warm and dry.

The first thing we do when we make a rubber boot, an arctic or a knit boot is to learn the farmer's problems and build our boot to fit his needs as well as his feet.

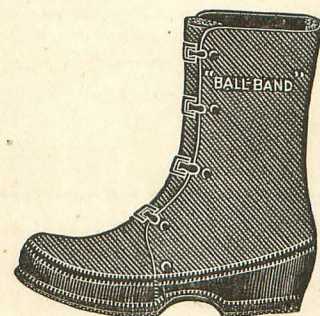
It takes more than good rubber, though. Rubber has to be **treated**—hardened for the heel, toughened for the sole—made stronger where your toes work up and down—and seams must be tight. We believe that "Ball-Band" Boots and Arctics are made so well that if you figure on the cost per day's wear they give, you will find them the lowest priced boots you can buy.

Look for the Red Ball on rubber footwear. It's the "Ball-Band" trademark and is put there for your protection, to satisfy you that you are getting our goods.

After you have worn one pair of "Ball-Band" boots you will know what real quality is. For every cent they cost you, you get a full return of wear and satisfaction. Over 45,000 dealers sell them. Eight million men wear them. If your dealer cannot supply you—write to us. We will send you the name of a nearby dealer who can supply you.

Mishawaka Woolen Mfg. Co.
Mishawaka, Ind.

"The House That Pays Millions for Quality."

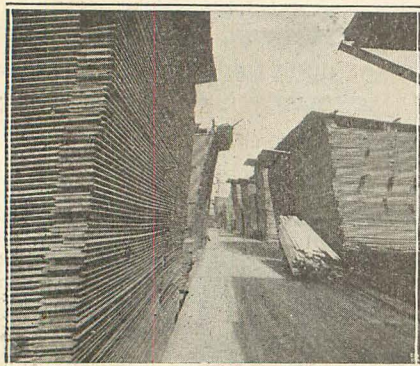


Coon Tail Knit Boot. Completely shrunk. Boot of strong knitted woolen yarn, with a shape that stays. Wind proof and snow proof—note the snow excluder. Overs to fit. Keep your feet and legs as warm as toast in coldest sort of weather.



and thereafter sell the products of their forests and mills direct to the consumer.

It is doubtful if the great significance of this move is yet fully realized by the consumers of lumber. The causes that have brought about the change are various; consumers of lumber have been paying the profits of five middlemen under the



old wasteful system of distribution in the lumber business, and the manufacturers have been gouged by the different middlemen by methods often extremely unfair, until, despite every care taken in keeping costs of manufacture down, they found that the price of lumber at the mills bore so unfair a relation to the price at retail that the manner of distribution was robbing both the consumer and the manufacturer simply to pay a profit to unnecessary middlemen. "We endured this treatment for twenty-five years," says Mr. Funck of the firm mentioned above, "and the business we have done since we have been selling direct to the consumer convinces us that the course we have adopted is the right one and that we should have made the change earlier. Further, the many voluntary expressions of satisfaction that have come to us from our new direct customers lead us to anticipate an enormous increase in our business, which will mean constantly decreasing prices to the consumer."

Owners of the Timber

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This company publishes a large lumber price list that is sent free to prospective builders and also maintains a large corps

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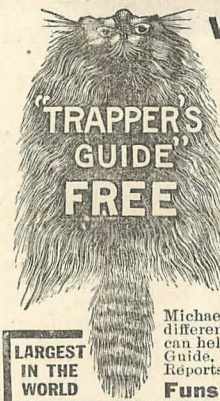


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WESTERN CANADA'S PROSPERITY

Not a boom but Due to Natural Development

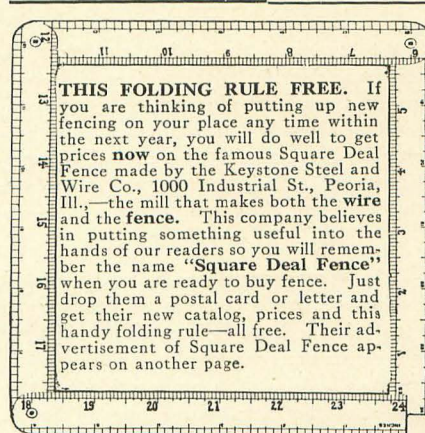
One of the largest banks in Holland has been doing a big business in Western Canada, and Mr. W. Westerman, the President, on a recent visit into the Provinces of Manitoba, Saskatchewan and Alberta, expressed himself as being much impressed with present conditions and prospects, and was convinced that the great prosperity of the Dominion was not a boom, but merely the outcome of natural developments.

Not only has money been invested largely in Western Canada by the Holland banks, but by those of Germany, France as well as Great Britain. Not only are these countries contributing money, but they are also contributing people, hard headed industrious farmers, who are helping to produce the two hundred million bushels of wheat and the three hundred million bushels of the other small grains that the Provinces of the West have harvested this season.

During the past fiscal year there came into Canada from the United States 133,710; from Austria Hungary 21,651; from Belgium 1,601; Holland 1,077; France 2,094; Germany 4,664; Sweden 2,394; Norway 1,692. And from all countries the immigration to Canada in that year was 354,297. From the United States and foreign countries the figures will

be increased during the present year.

Most of the people have gone to the farms, and it is no far look to the time when the prophecy will be fulfilled of half a billion bushel crop of wheat in Western Canada.



THIS FOLDING RULE FREE. If you are thinking of putting up new fencing on your place any time within the next year, you will do well to get prices now on the famous Square Deal Fence made by the Keystone Steel and Wire Co., 1000 Industrial St., Peoria, Ill.—the mill that makes both the wire and the fence. This company believes in putting something useful into the hands of our readers so you will remember the name "Square Deal Fence" when you are ready to buy fence. Just drop them a postal card or letter and get their new catalog, prices and this handy folding rule—all free. Their advertisement of Square Deal Fence appears on another page.

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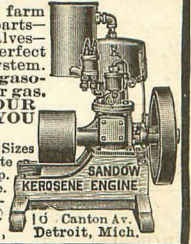
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North Dakota Farmer

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Vol. 14 NOVEMBER, 1912 No. 5

Let the motto be, "Pigs and Poultry for Boys and Girls."

How may we improve the *North Dakota Farmer*? Will you not send in suggestions?

It is a pleasure to see the "grain" walk into market, leaving the greater part of the fertility on the farm.

Some are satisfied with purchasing the calves that their neighbors do not wish to keep; others prefer to raise their own. How is it with you?

The silo is growing in popularity thruout the state. In contrast with the silo is the burning stack of straw. One is the sign of concentrated nourishment; the other is the evidence of wasted fertility.

South Dakota is following in the footsteps of North Dakota in the better-farming movement. The Association gives \$1,000 for every \$2,500 or \$3,000 raised by any county, according to size.

We do not hear many complaints about the prices of farm products. Watch the unwise dispose of his livestock simply because he can secure a good price. Then again watch his attempt to stock up his farm a little later on.

Altho the early fall was most unpropitious for threshing and plowing, there has been such mild weather recently that, except where there is a heavy fall of snow, a large portion of the plowing will be finished before the final freeze-up. Plow and disc as much land as possible this fall.

The Country Life Conference which meets at Fargo in connection with the

Boys' and Girls' Institute is the first on record in the state. Make it a point to attend, or send a delegate from your community. It will cost the community very little, and the benefits will be far-reaching.

We commend the article elsewhere in this issue relating to the matter of financing the farm. The farmers of Europe can teach us many lessons in finance as well as crop production. It takes capital to run a European farm, but they get the results that well repay the outlay.

The second measure in the order of business when Congress convenes next month is the Page-Wilson Bill, a bill providing for the vocational education of our boys and girls, their preparation for the duties of the farm, workshop and home. No tariff measure is of such importance, much as we would like to see a "descension."

A woman in a buggy was approaching an auto. The horse began to prick up his ears. The woman (and a man does the same thing) struck the horse a sharp cut with the whip. In an instant the horse had made a sharp turn and away went the horse buggy and woman, who in her deluded mind was *condemning the auto*. This was an actual occurrence. Think it over.

It has required a large amount of faith in the good judgment of the farmers of

the state for this paper to keep hewing to the line of scientific farming in the face of many a jeer at "plug-hat farming," "school-crank agriculture," etc. It has ever been the policy of this paper to advocate the very best measures for the farmers of the state, whether the policy was popular or not, and whether or not there was financial compensation for the expenditure of money and effort. The time has come when the young student of agriculture is putting to shame by *deeds* the former "skimmer" and soil robber. We are, indeed, grateful at this time of thanksgiving that so many of our friends have stood faithfully by us and that the ranks of the true farmers are growing daily. Do you appreciate our effort? Will you show it?

Ten states now have equal suffrage and nine have prohibition. It is quite remarkable that where woman has a vote, she is sometimes rather indifferent as to the political party or politician, and often remains away from the polls, but let there be a question of principle, and she is in evidence and with effect. Mothers, as well as fathers and also young men and women should send the letter mentioned on this page to our U. S. Senators. Those who have taken up their homes in this state supposing that their children would be protected from the curse of liquor and those who have struggled to free it from the dominion of the liquor interest should not fail to plead for the passage of the law forbidding interstate shipment of liquor. Do it *Now*. Our senators will have their ears very close to the ground from now on.

IT MEANS MORE TO NORTH DAKOTA THAN A PRESIDENTIAL ELECTION

On December 16 next there will come up in the U. S. Senate at Washington, D. C., a bill known as the "Amended Kenyon Bill," No. 4043. This bill would take liquors out of interstate commerce. This means that whiskey, wines, beer, or other liquor cannot be shipped, either by freight or express, into a territory where the sale of liquor is forbidden. It means a prohibition state in fact for North Dakota.

Please act quickly. Get as many well known and prominent citizens as you can to write to your U. S. Senators urging the passage of this bill. Letters of protest should go to Washington between December first and twelfth.

HERE IS A FORM OF LETTER. WRITE BOTH U. S. SENATORS.

Honorable.....

Washington, D. C.

Dear Sir:—

There is now pending in the Senate a Bill known as the "Amended Kenyon Bill," No. 4043, which seeks to prevent interstate shipments of liquor.

This Bill is indispensable to the health and morals of the people at large, and I hope you will use your influence to insure its passage. I feel sure that such action on your part will meet with the approval of a large majority of your constituents.

Very truly yours,

(Sign your name here).....

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Ask Your Grocer for a Trial Package

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Lisbon,

North Dakota

Elementary Agriculture

THE POTATO AND ITS CULTURE

For Seventh Year—Fourth Month
of the N. D. Course of Study

J. H. Shepperd and O. O. Churchill

The potato is rapidly becoming an important crop in North Dakota. The high quality of the tubers for both table and seed purposes is naturally developing a wide market for those produced in this state. Large quantities are annually shipped to southern states for seed. This market, which has been increasing each year, probably furnishes a permanent avenue for the disposal of the proper varieties at fair prices.

Those who grow potatoes the years following high prices and quit when the market is poor will invariably meet with failure. Following this system crops will usually be produced when prices are low and good markets will be missed. This is the same proposition the stockman faces when he sells his breeding animals because they are too cheap to raise and then buys again after the price has gone up.

An ideal potato soil is a deep rich friable loam, well stocked with humus. A fair degree of success may be attained on many types of soil if the proper preparation is made. The grower is usually limited in the types of soil which he has on his farm and may have nothing approaching a typical one for potatoes. This need not necessarily discourage any one as the preparation and culture are of more importance than the type of soil.

The depth of plowing is an important factor as the soil should be in rather a loose, mellow condition when the seed is planted. Five to eight inches will be found to approach the correct depth. Judgment must be used, as the type of soil, time of plowing, and physical condition all have an influence on the depth of plowing. The shallow plowing frequently practiced will not be satisfactory as the seed should be planted at a depth of four inches according to our trials, which is deeper than many plow.

Drainage must be secured on wet soils. Potato rot may frequently be avoided by providing good drainage. Surface drainage will be satisfactory on soils in this state adapted to potato production. Tile drainage improves the physical condition but it is doubtful if it would be a paying investment for this crop alone except on the wettest soils and these are poorly adapted to potato growing. However, the question of tile drainage should be thoroly investigated as it will render some soils,

otherwise unfit, suitable for potato growing.

Humus is partly decayed vegetable matter. A good supply may be secured by applying farm yard manure or by growing hay and pasture plants. It is not a good practice, however, to apply manure the same year the potatoes are grown.

Clover is the best crop to precede potatoes. Its rooting system and the beneficial effect it has on the soil cannot be secured by any other crop. Any legume is good, alfalfa especially, but in this state alfalfa has not been satisfactorily grown in a short rotation. Cow peas and other legumes are used farther south. The beneficial effect of clover on the physical condition as well as the great addition of humus, makes it an invaluable crop.

The climate of North Dakota is well adapted to potato culture. A temperate, moist climate is best, but is not as important as the physical condition of the soil. The climate cannot be changed but adverse conditions may be largely overcome by proper culture.

A crop of 200 bushels of potatoes, removes from the soil 40 pounds of nitrogen, 20 pounds of phosphoric acid and 70 pounds of potash. A 25 bushel wheat crop including straw removes 42 pounds nitrogen, 23 pounds phosphoric acid and 40 pounds Potash. It will be seen that the amount of nitrogen removed by potatoes is comparatively small while the potash removed is relatively high. Yet the ratio of potash to nitrogen in the soil is much higher than the quantities removed by any crop and for this reason nitrogen or even phosphoric acid is as apt to be the limiting factor, as potash.

Barn-yard manure is commonly condemned as a fertilizer for potatoes. When applied fresh, it favors the development of diseases which injure the market value of the tuber. This is especially true of horse manure. It is not advisable to plow under fresh manure for potatoes as better results will be secured by applying the manure the previous year and this should be on hay or pasture land. The danger of developing diseases is overcome and the fertilizing value is about as great. It should be remembered that the effect of clover and manure is in evidence here much longer than in regions having a heavy rainfall.

The size of the seed potato is not as important as the selection. A medium sized tuber is as good for seed purposes as a large one from the same hill. It has been found that when large, medium and small potatoes were planted whole, the crop decreased in proportion to the size of the

tubers planted. This varies with different varieties.

The condition of the seed is one of the most important factors in potato production. Sprouting of the tubers and the removal of the sprouts always result in a greatly decreased yield. At the Nebraska station sound tubers gave 56 per cent greater yield than sprouted seed of the same variety. Many experiments confirm these results.

The first sprout is the strongest and if it is allowed to grow and is then removed, two or more weaker ones will be thrown out. The sprouting of the seed uses the food stored up for the growth of the young plant. Too much care can not be exercised in storing the seed potatoes so that there will be no danger of sprouting. None but firm, hard tubers should be used for seed.

The time of planting should be regulated in accordance with the soil, climatic and market conditions. Early planting gives the best results. The ground should be warm enough so that the cuttings will grow soon after planting or there will be danger of rotting. If there is danger of frosts after the plants are up, they may be hilled up until the danger has passed. Good judgment alone will determine the time to plant, but the vines will stand light frosts.

Methods of planting vary to some extent, but where large areas are to be grown the machine planter is the only practical way. If a good planter is used and care is taken to regulate it good work can be done.

Depth of planting is another practice which should be regulated by several conditions, soil, climate, time of planting, moisture and cultural methods. In dry seasons deep planting is best. When everything is considered, 3 to 4 inches will prove to be the best depth to plant. Less than 3 inches would be considered shallow and more than 4 inches deep planting.

The distance apart to plant the pieces is influenced by the size of the seed piece, the fertility of the soil and by the variety. A good average distance would be 12 to 16 inches apart in the row and the rows 32 to 36 inches apart. The Early Ohio, for instance, has small vines and so could be planted closer. When the vines are full grown they should cover the ground fairly well.

Cultivation should begin as soon as the vines are up and be continued until the blossoms appear or until it causes injury to the tops. The cultivator should be used at frequent intervals, 7 to 10 days, even if there are no weeds. At the Cornell Station the average yield in favor of six cultivations rather than three was 41.2 bushels per acre. Thus a profit is secured far in excess of the labor involved. In some seasons it might mean the difference between success and failure. The results have been even more marked here than at

Cornell, but are from too limited data to be quoted except in corroboration.

Level culture vs. hilling. Hilling should never be practiced except in districts having a heavy rainfall and poor drainage or where irrigation is to be practiced. The crop will mature a little earlier when hilled and may be of value to early market growers. Even in places having heavy rainfall the results favor level culture. Frequent, shallow and level cultivations should be practiced. In trials at this station level culture gave far better results.

CONSERVATION OF PLANT FOOD IN THE SOIL

II.

M. C. James

If a man makes a deposit of \$1,000.00 in a bank, then draws out \$100.00 a year, without returning any, how long would his bank account last? Suppose a second man makes a deposit of \$1,000.00 and checks out each year \$100.00, but unlike the first man, he redeposits the same amount, how long will his money last?

Plants take from the soil several plant food elements in the form of minerals. These elements are: phosphorus, potassium, calcium, magnesium, sulphur and iron; besides, they get nitrogen from the soil, which is a gas. The other elements that plants use are: hydrogen, oxygen and carbon. These are taken from the air and water.

Soil chemists tell us that there is a certain amount of plant food in any given soil; some soils being naturally well supplied with food elements; others being short of any one or more of them. While there are ten elements of plant food absolutely necessary to plant growth, the farmer needs only concern himself with a few of them. Nitrogen, phosphorus and potassium are the ones most often found short in ordinary soils. Because of this fact they are the ones that are often applied to the soil in commercial form, and hence are given money value.

These three elements become deficient in soils because they are demanded in large quantities by the growing plant, and because most soils do not contain them in large quantities. The soils of our own state are quite rich in potassium, however, so that we do not need to consider it at present. The other mineral plant food elements are found in the soil in large quantities, or are needed in such small amounts by growing plants that they are not liable to become deficient.

The history of agriculture shows that in the past the soil tends to become less and less productive the longer it is tilled. This is kept up in some countries in the old world until it is only with the greatest difficulty that those who till the soil can make a living upon it.

There are probably several reasons for this decrease in crop production. We

shall only consider two of them in this lesson. In the first place, any soil must be in good physical condition before it will grow good crops; that is, it must be mellow and in shape so that the air and water can pass in and out fairly well. But by most methods of farming this physical condition of the soil is made poorer and poorer. One cause of this is the fact that the humus (partially decayed plant or animal matter) is not kept up in the soil; this we shall discuss later.

Another reason is that the plant food elements named above are not kept in the soil in large enough quantities in a form that the plant can make use of them. What becomes of the plant food? It is taken from the soil by the growing crops. These crops are harvested and hauled to town. In this way the plant food is lost to the soil. We say that this plant food is taken up by the plant because our farm crops are composed of these very elements.

Let us consider these three elements which we have said are liable to become short. You know the element "phosphorus" in the common form of a match. It is the part of the match which lights when the match is scratched. Did you ever get the odor of burning feathers or hair? This peculiar odor is that of a compound of nitrogen. If you have gotten soap in your eyes and felt the sting you probably felt the effects of some form of potassium.

In order to grow twenty-five bushels of wheat the following amounts of these different elements are taken from the soil:

	Nitrogen	Phosphorus	Potassium
Grain.....	35½ lbs.	6 lbs.	6½ lbs.
Straw.....	12½ lbs.	2 lbs.	17½ lbs.
Total	48 lbs.	8 lbs.	24 lbs.

Hence, every time the farmer hauls 125 bushels of wheat to town he takes 177½ pounds of nitrogen, 30 pounds of phosphorus, and 32½ pounds of potassium off the farm. If he burns the straw he either burns or puts in a pile practically 62½ pounds of nitrogen, 10 pounds of phosphorus and 87½ pounds of potassium; making a total loss of 240 pounds of nitrogen, 40 pounds of phosphorus and 120 pounds of potassium.

As stated above, there is a certain given amount of these elements in the soil. Now if there is a constant drawing out of this plant food, with little or no return to the soil, the time will come when some of these elements will be lacking, just as the bank account will sooner or later be short if no money is redeposited.

Now when any one of these elements becomes deficient in the soil the crop is cut short just to the extent that this element is short. For example, if there is enough available plant food in the way of each of the elements to grow twenty-five bushels of wheat to the acre except nitrogen, but only enough of it to grow 15

bushels to the acre, the yield will not be over fifteen bushels; hence, any one of these elements may be the limiting factor in crop production.

If, then, these elements are liable to become deficient, how can a farmer plan to conserve them? In the first place, he should keep more livestock on the farm and feed a good portion of his crop to his animals and apply the manure to the soil. In the second place, he should not burn the straw or stubble, but return it to the soil. On the market nitrogen is worth 15 cents a pound, phosphorus 12 cents a pound, and potassium 6 cents a pound. At those prices a ton of wheat straw contains 12½ times 15 cents or \$1.87 worth of nitrogen; 2 times 12 cents or 24 cents worth of phosphorus; and 17½ times 6 cents or \$1.05 worth of potassium; making a total of \$3.16 of actual loss in money value when a ton of wheat straw is burned, not to say anything about the humus destroyed.

It is a sad sight to one who knows what is sure to happen, when he sees a straw stack burn. Some one will have to suffer for every stack that is burned. It is a crime to burn straw and should be recognized as such by law.

This is not only true because of the plant food in the straw, but because of the effect that the straw and manure have on the soil in other ways. Straw when it decays furnishes humus to the soil. This, among other things, tends to make the soil hold more water, aids in the growth of needful bacteria and makes the soil less liable to drift.

The farmer can also add nitrogen to the soil by growing legumes, like alfalfa, clover and field peas. These plants have the power to take nitrogen from the air and place it in the soil because of the bacteria on their roots.

While we are in no immediate danger of land ruin, now is the time for us to take pains to conserve the fertility of the soil, because it is very hard to build up worn out soil, and we should strive to maintain our present fertile soils.

For Sale

Fine Farm in the Best Watered Valley in Montana.

Forty acres under plow. A never-dry river runs across corner. County Road runs diagonally thru land. Irrigation ditch north of land, if you care to use it. Five miles to railroad. One of the finest apple orchards in world near mouth of valley. 400 acres plowed. Fine for grain, flax, etc. 225 acres grazing land. May divide if desirable.

NO CROP FAILURES

Inquire of

R. M. SCHMERLER

17 South Sixth Street,

Mpls. Minn.

Livestock Department

FARM AND STOCK NOTES

N. J. Shepard

It is not always the largest producer that yields the largest net profit. It is usually the animal that best digests its food and puts the flesh where it is wanted without waste of feed.

There is no pace so valuable or so much appreciated and so practically useful in a horse as a fast, square walk, and there is nothing that will cause an animal to be driven harder and kept so continually on the other paces as a deficiency in this respect.

Good digestion is the result of feeding enough to maintain the animal, but not enough to keep the stomach in an overloaded condition. Horses should have appetite enough to relish a meal when given them.

The highest state of production is essential to realize the greatest profit and that every one shall be producing bountifully is necessary to realize a reasonable return for the labor and time of the farmer.

In feeding especially when rapid fattening is the object, the animals should be given the kind of food which they relish and of which they will eat the largest quantity. It pays sometimes to study the animals' appetite.

Sheep excrement is one of the richest and most valuable fertilizers which can be applied to growing crop and the animal which makes it brings in other valuable returns for the feed and care bestowed upon it.

No one should so crowd himself with work or his land with crops and stock, that he will not have means or time to turn his attention to growing a crop which promises good returns, or to buy a few animals from which he can make a profit.

A man may be an excellent judge of stock, able to select those animals for his herd whose use will give the best results in breeding; but if his system of feeding and management is not such that the animals will thrive and yield a good increase, good selecting is rendered ineffective.

The man who knows how to feed, not only as to the best quantity, but also the best rations, will be able, under nearly all conditions to realize the best profits, and while much may be learned from others there is nothing that will fully equal our own experiences.

The main reason for pruning is, as for as yield is concerned, to establish a balance between the bearing wood and the crop to be borne. A tree left to itself grows to wood rather than fruit. The surplus wood, the accumulation of old growth must be renewed.

A heifer that is to be raised for the dairy should be handled and made accustomed to all necessary manipulation from the time she is a calf until maturity. If this is done she will give little, if any, trouble and make a better cow.

As a rule it is unwise to discard a young sow because she fails to come up to expectations with her first litter. Circumstances, not always within the understanding of the owner may cause her failure with the first litter, and ever after she may give satisfaction.

While young pullets, especially those hatched reasonably early in the spring, make the best winter layers, yet if the uniformity, beauty and vigor of the flock is to be maintained the best of the old hens, those from two to three years old, must be retained to lay the eggs for hatchling largely. Miscellaneous breeding from untied pullets is rather too uncertain in its results for dependence when the offspring are wanted for breeders, and it is desired to improve the flock.

WASHINGTON HOLSTEIN HERD WINS PRIZES AT THE NATIONAL DAIRY SHOW

The state of Washington has won signal honors at the 7th National Dairy Show recently held—October 24-November 2—at Chicago. The Hazelwood Dairy Farms of Spokane had a splendid herd of 38 Holsteins entered at this show in competition with herds from states from all parts of the country. The Hazelwood Herd competed in both the Breeders and Exhibitors classes and was most successful in both classes.

Without attempting to go into details it will be sufficient to state that in these various classes their herd, consisting of both adults and calves, won prizes as follows:

1st Prizes	14
2nd "	6
3rd "	11
4th "	6
5th "	2
6th "	2

making a total of 41 prizes, most of them at or near the top of the list. In addition, a heifer calf under 6 months of age won the Junior Championship and another one be-

Are you boosting the North Dakota Farmer? One year, 50 cents; three years, \$1.00.



Purebred Registered
HOLSTEIN CATTLE
The Greatest Dairy Breed
Send for FREE Illustrated Book
Holstein-Friesian Asso., Box 135 Brattleboro, Vt

SHROPSHIRE RAMS

I have forty-five thoroughbred Shropshire rams for sale. Coming two and three years old. Prices right. Call and see what I have to offer or write.

FORRESTER H. SMITH

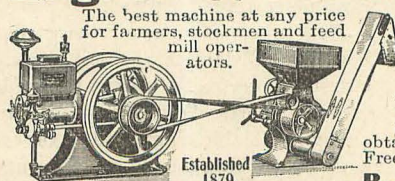
Amenia - - North Dakota

W. F. JACOBS Livestock Auctioneer

Thoroughly Posted on Pedigress

Terms Reasonable LISBON, N. D. Write for dates

Engine & Feed Grinding Outfit



The best machine at any price for farmers, stockmen and feed mill operators.

Established 1879

THE HOWELL ROLLER FEED MILLS have been wonderfully successful everywhere. They wear a life time, grind twice as fast with the same power as the best burr or stone mill made. Good money in custom grinding. Grinds Graham and Rye Flour as well as feed. Engine is of latest and most up-to-date design. Runs at proper speed to obtain best grinding results. Simple and Durable. Free Catalog D3 tells everything.

R. R. HOWELL & CO., Minneapolis, Minn.

tween 2 and 3 years old won both the Senior and Grand Championships. Again in the Exhibitors' Herds of 12 cows from any state, this herd won for Washington the 1st prize, Illinois and Iowa being 2nd and 3rd respectively. The week previous this herd had carried off a lot of premiums at Waterloo, Iowa.

This remarkable showing indicates that the great Northwest is pushing to the front and that the Inland Empire of Washington is not only a prolific fruit and grain region, but that in dairying it must be reckoned with also.

CORN

According to Prof. J. H. Shepperd, Corn fodder furnishes more digestible roughage per acre than any other forage crop grown in America. Shredded baled corn fodder sells for the same price on the Chicago market as meadow hay. It is a good roughage for horses, wholesome and usually free from dust.

Ensilage from corn is a standard feed for dairy cattle and is good for beef cattle and sheep. It supplies a good substitute for fresh pasture grass in winter. A succulent feed of this sort is a great help in keeping up the milk flow in winter.

Corn is the best fattening grain known and is relished by all classes of live stock.

THE HANDLING AND CARE OF MILK

L. A. Rodgers, U. S. Bureau of Animal Industry

Preventing changes in milk is a question of preventing the introduction of bacteria into milk and of checking their growth or destroying them when they are present. The production of milk reasonably free from bacteria is a simple question of cleanliness.

How far a milk producer can go in this direction with profit is a question that each one must decide for himself. The model dairies which are used as examples of what dairymen should do are frequently maintained in such an expensive manner that the farmer or dairyman doing a small business or producing milk in connection with other lines of farming can not expect to live up to their standards without increasing the cost of his milk.

However, there are many simple rules and methods for handling milk, requiring little extra labor and no added expense, which will materially increase the healthfulness and keeping quality of the product. Any precaution that reduces the dust in the stable at milking time reduces the initial number of bacteria in the milk. The cows should not be fed before milking. Cobwebs and other dirt can be easily removed from the ceiling. The stable floor should be so arranged that the dirt on the flanks and udders of the cows will be reduced to a minimum. The daily use of a

brush will add greatly to the efficiency of these precautions. Care should be taken that the cows do not have to wade thru filth in the barnyard.

Even with the greatest precaution some bacteria get into the milk, and further precautions must be taken to prevent their undue multiplication. The practical way to accomplish this is by control of the temperature of the milk. Advantage is taken of the natural law governing the limits and rapidity of growth of bacteria at different temperatures. The milk should be cooled at once to a temperature as near the freezing point as circumstances will permit. The usual limit is 50 degrees F., but 40 degrees F. is much more desirable.

The quickest and most economical method is to run the milk in a thin layer over the surface of a receptacle containing cold water. Many varieties of coolers for this purpose are on the market. Some are so arranged that a stream of water passes thru them, while in others the milk flows over a conical tank containing cold water. It is not improbable, however, that in many cases the benefit derived from the cooling is overcome by the con-

tamination of the dust on the cooler and the absorption of odors from the room in which it is used. A cooler should be located in a clean, well-ventilated room and be protected from dust by an efficient covering.

On farms where water is supplied by a windmill it is very easy to arrange the water trough so that the water flows from the pump thru a trough or tank in which the cans of milk may be set to cool. This is a slow method, but much better than nothing.

It is not sufficient merely to cool the fresh milk. To insure good results it must be kept cold until used. The housekeeper who leaves her bottles of milk in the sun or standing in a warm kitchen should not blame the milkman for sour milk.

Various attempts have been made to preserve milk by holding it above instead of below the temperature favorable to the growth of bacteria. Devices for this purpose are called thermophores. While the most favorable temperature for many bacteria is at or near 98 degrees F., few grow well at temperatures a few degrees above this point, and at 110 degrees to 120 degrees ordinary forms will not grow at all.

ST. PAUL UNION STOCKYARDS CO., SOUTH ST. PAUL, MINN.

Comparison of Receipts and Shipments of Live Stock for October, 1912

	Receipts						Total Cars
	Railroads	Cattle	Calves	Hogs	Sheep	Horses	
C. R. I. & P.....	259	186	1375	94	32	34	
C. G. W.....	1022	213	3854	662	33	96	
C. M. & St. P.....	4990	688	10879	15843	57	422	
M. & St. L.....	2263	331	6188	1159	21	186	
C., St. P., M. & O..	5244	1068	18467	7168	43	515	
C. B. & Q.....	409	57	1898	1690	.....	58	
M. St. P. & S. S. M.	12030	2840	11510	9463	2	650	
Gt. Nor.....	23323	4469	18277	39972	32	1453	
Nor. Pac.....	16798	2215	4952	41826	22	913	
St. P. B. & T.....	.....	.....	.....	.....	.....	.....
Driven In.....	614	120	931	181	4	.....
Total.....	66952	12187	78331	118058	246	4327	
Increase.....	.....	.....	6122	.....	.....	.....
Decrease.....	23734	1181	.....	157551	401	1411	
Increase over 1911	.....	1893	85793	.....	.....	105	
Decrease.....	25264	.....	.....	121638	2277	.....
Average Wts.....	750	228	222	79	.....	.....
	Shipments						Total Cars
	Railroads	Cattle	Calves	Hogs	Sheep	Horses	
C. R. I. & P.....	5732	4	.....	2024	.....	167	
C. G. W.....	4780	480	596	4386	.....	178	
C. M. & St. P.....	14048	853	7135	16160	41	667	
M. & St. L.....	3050	83	134	2940	.....	115	
C., St. P., M. & O..	10930	774	10066	13891	49	509	
C. B. & Q.....	12831	265	.....	50632	31	716	
M. St. P. & S. S. M.	1150	64	.....	5745	20	63	
Gt. Nor.....	1091	66	.....	1002	26	42	
Nor. Pac.....	949	58	.....	615	55	36	
St. P. B. & T.....	.....	.....	.....	.....	.....	.....
Driven Out.....	660	182	102	356	6	.....
Total.....	55221	2829	18033	97751	228	2493	
Increase over 1911	.....	.....	142	.....	.....	.....
Decrease.....	11632	1473	.....	134839	417	982	
Jan. 1 to date.....	222577	20078	185323	298378	4836	10610	
Increase over 1911	.....	.....	.....	.....	.....	.....
Decrease.....	19292	13036	6392	115486	2378	1388	

CLASSIFIED ADS.

One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

LIVE STOCK

HORSES

FOR SALE

Percheron, Belgian and Shire horses
J. W. & F. T. PETERSON, Litchfield, Minn

CATTLE

North Branch Stock Farm. High class Short-horns. Herd, bull, Supreme Judge 177722—pure Scotch, John Donnelly, Grafton, N. D.

FOR SALE

GALLOWAY CATTLE

J. W. & F. T. PETERSON, Litchfield, Minn

SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. GEO. N. SMITH, Amana, N. D.

MISCELLANEOUS

Envilla Stock Farm, Cogswell N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolfand Fox Hounds, Pure Bred Poultry, Pet Stock. Write them.

FOR SALE: Registered Jerseys. Bull calves and one mature Bull at reasonable prices. W. G. Weeks, Backoo, N. Dak.

RED-POLLED AND GALLOWAYS

Shropshire Bucks

J. S. BIXBY, - - LISBON, N. D.

FOR SALE. Creamery in first class condition at a bargain at Crystal, N. D. For further information write to
J. S. GESTSON, Sec. CRYSTAL, N. D.

FARMS WANTED

TO FARM OWNERS: Our plan puts you into communication with buyers at low cost; write for particulars.

Co-operative Advertising Company
Fergus Falls, Minn.

A BARGAIN FARM. 200 acres, 9 miles from Eldon Miller Co., Mo., a Division point in Rock Island, R. R. 125 acres in cultivation; 100 in bottom, no buildings; good orchard, fine water, well fenced; 30 acres meadow \$20 per acre. Other good farms for sale. Goodrich Realty Co., Eldon, Mo.

DAIRYMEN, READ THIS!!

Owner offers all of Section 31, and 435 acres, 1 1/2 miles Southwest of it, number one Dairy land, located from five to seven miles South of the great Steel plant, near Duluth, at \$50 per acre for the section, and at \$30 per acre for the other property, divided into 40 and 80 acre tracts as buyer may desire. If you want to buy in the best location in America, with ideal conditions for profitable Dairying and with the certainty that the enormous demand from the thousands soon to be employed in the Steel Industry, will enable you to command the highest prices for your products, then investigate these lands, and write to me promptly for plans and particulars before the best locations are sold.

WM. McBEAN

Duluth, - - - Minnesota

Oxford Down RAMS

A Few Choice Ones
FOR SALE

Willobank Farm

EASTGATE BROS.

LARIMORE, N. D.

Milk held in thermophores usually will not curdle or change appreciably for several days, but it has been shown that unusual kinds of bacteria are able to develop at these high temperatures and that the milk which has every appearance of being good may contain large numbers of bacteria whose action is unknown. There are now on the market various bottles so constructed that the walls are almost perfectly insulated and thus permit only a slow change in the temperature of the contents of the bottle. Some of these have been recommended for holding babies' milk at the proper temperature for feeding thru the night or on journeys. Nothing could be more pernicious, as the following table shows. In securing the results shown in this table a bottle of ordinary milk of good quality was divided, one-half warmed to 102 degrees F. and the other cooled to 36 degrees F. These were put in pint vacuum-jacketed bottles and held in a warm room.

Growth of bacteria in milk held at feeding temperature

Age of milk	Temperature, deg. F.	Bacteria per cu.cm.
Cold milk:		
Fresh.....	37	23,900
4 1/2 hours.....	43	35,000
7 1/2 hours.....	44 1/2	46,000
Warm milk:		
Fresh.....	102	23,900
4 1/2 hours.....	95	1,420,000
7 1/2 hours.....	93	27,000,000

The large number of bacteria in the warm milk even at the end of 4 1/2 hours makes the milk unsafe for infants' food. These bottles serve a very useful purpose when it is necessary to carry an infant on a journey, but they should be used only to keep the milk cold. When this is done the milk should be cooled by holding in a mixture of ice and salt until ice begins to form in the milk.

The next table shows the increase in temperature and bacteria in two samples of milk, one of which was properly cooled, while the other was only a little below the temperature of a good ice box. These two samples were held in pint vacuum-jacketed bottles and examined at the end of 24 and 48 hours:



Genuine Hamilton Take-down Hunting Rifle, 22 cal. long or short. Kills game at 100 yards. Automatic shell extractor. Set of targets. Given for selling 30 of our latest Jewelry Novelties at 10 cents each. Easy selling. We trust you. Send at once. Extra present. THE WHITE CO., Box 1, Melrose Highlands, Mass

ST. PAUL UNION STOCKYARDS CO., SOUTH ST. PAUL, MINN.

Comparison of the Origin and Disposition of Live Stock for October, 1912

Origin of Live Stock Received

States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota.....	32979	9641	58504	23867	42	2223
Wisconsin.....	6400	1424	13910	9353	6	493
Iowa.....	56	4	287	16	66	12
Far South.....					38	2
So. Dakota.....	3254	221	1860	2095	21	166
No. Dakota.....	10516	693	3770	12894	42	532
Montana.....	13654	197		69822	31	896
Far West.....						
Manitoba & M. W. T.....						
Far East.....	27	3		11		1
Returned.....	66	4				2
Totals.....	66952	12187	78331	118058	246	4327

Disposition of Live Stock

	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
So. St. Paul P'k'rs.	16723	7076	60130	23124		
City & State Butch	952	199	2000	271		53
Outside Packers...	2225	687	15840	9074		265
Minnesota.....	6843	608	98	7341	83	250
Wisconsin.....	1710	124		6255	41	92
Iowa.....	12151	428		9608		388
Nebraska.....	483					12
Kansas & Missouri	85					2
So. Dakota.....	3115	87		670		88
No. Dakota.....	915	36		250		28
Montana & West..	328	41			33	9
Far South.....						
Manitoba & N. W. T.	18	3		403	20	4
Mich. & E. Can. ..						
Chicago.....	18959	544	95	63345	31	103
Ills. (ex Chicago)..	6358	68		230		207
Eastern Points....	1013			304	20	30
Returned.....	66	4				2
Totals.....	55221	2829	18033	97751	228	2493

Poultry Department

STARTING A POULTRY FARM

Michael K. Boyer

A poultry farm built upon a secure foundation, is sure to be successful if afterward properly managed. It is not only necessary to make the right kind of start, but the work must be regularly and faithfully performed, day in and day out.

As a rule, beginners start with great enthusiasm, and not a few build air castles—but to very many of them the sameness of the work, the close application, the constant watching, soon become monotonous, and then there is a shirking of duty, neglect, carelessness—and the enterprise becomes a failure. The point is to begin small—measure the s.z. of the initial step with the amount of capital and experience at hand.

It is often the case that men with more or less available capital practically put all their money in houses and stock. This is a mistake, and more so in the case of those who have had no personal experience in the work.

In the parlance of today, "a man must be onto his job." He must know what to do and how best to do it. He must be aware that inexperience may cause leaks, and leaks will soon sink the enterprise.

It is a noteworthy fact that the most successful poultry farms of today are those that have started from a small beginning and gradually expanded as business and experience warranted. Men who would not go into the dry goods business for the reason that "they knew nothing about it," will build houses and stock them, and expect the hens to do the rest.

Hens, like cows, yield a profit according to the treatment given. They will not stand neglect. They are hard workers when properly rewarded, but can be the most idle and indifferent producers when made to shift for themselves.

Our agricultural colleges have done much to teach the new aspirants how to tread in poultry paths, and men and women who endeavor to improve by these excellently arranged courses of instruction, will have won half the battle—the other half naturally belongs to practical experience.

A man with \$1000 had better invest one-half of it in buildings, stock and fixtures, and reserve the other half for feed and running expenses, rather than invest the whole amount in the equipment and have to go in debt for the feed.

Eggs and poultry are staple crops, and the demand is far greater than the supply.

This country needs more poultry farms, and they will be successful when properly built and managed. But the beginning must be small and the growth gradual, so that every part of the work is promptly noted and correctly performed.

The duck laying season opens in February, altho a number of early hatched ducklings begin laying in January. The first eggs of the season are rarely ever fertile.

The duck house should have an earth floor, and this ought to be heavily bedded with leaves, straw, or some other light litter.

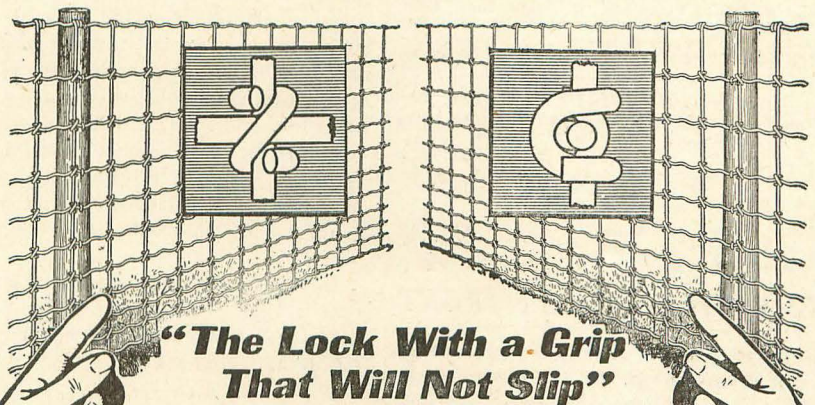
It is claimed by those who have tried it,

that a cross of Muscovy drake on Pekin ducks will produce sterile progeny.

While breeding ducks can be successfully kept on land, it has been proved that those having the advantage of bathing water keep in a more beautiful condition, and there is greater fertility in their eggs. Bathing is the only real exercise a duck can take, for, unlike the hen, she cannot scratch. A less number of drakes are needed in a flock where bathing water is supplied.

The age of vigor and productiveness in a duck is about double that of the hen. Ducks have been successfully bred up until seven years of age.

Geese enjoy low, wet pastures. They do not thrive in confined quarters. Grass and water is their principal diet. According to an experiment tried some years ago in Rhode Island, fall-sown rye, spring-



"The Lock With a Grip That Will Not Slip"

The Square Deal Lock **double** grips the one-piece stay wire to the strand wires and absolutely prevents them from slipping. It locks every joint of Square Deal Fence so your stock can't spread the stay wires—**holds every strand with an iron hand.**

Lets you forget you have stock full of life and energy on one side of the fence and fields of growing grain or hay on the other. Every Square Deal Lock is a lasting guarantee of fence satisfaction. There are no brittle welds to snap — no cumbersome knots to hold moisture, gather rust and weaken the fence. The simplest, strongest, **safest lock ever used on a wire fence.** Get Square Deal prices and see this fence before you buy.

Square Deal Fence

HAS WAVY STRAND WIRES, giving it elasticity—making it springy so it will quickly come back into shape after a sudden heavy strain—keeps it tight and trim the whole year round. These elastic waves are woven into the strand wires. They won't stretch out and let the fence sag between the posts. They are like so many steel springs keeping the fence tight and trim, giving your farm a well kept, prosperous appearance, and adding years of life to the fence.

THE ONE-PIECE STAY WIRES prevent sagging, bagging or buckling to let the pigs under. They help support Square Deal Fence so it requires fewer fence posts. This means a big saving of money, time and labor.

Write for Price List, Catalog and Free Folding 2-Foot Rule

Just drop us a postal and we will send you by return mail latest Square Deal prices, complete catalog, local dealer's name and a high grade, four section, 2-foot folding rule — all **FREE**. Send today.

KEYSTONE STEEL & WIRE CO.
1003 INDUSTRIAL STREET (3) PEORIA, ILL.

S. G. Buff Orpingtons, S. C. Black Orpingtons,
M. Pekin Ducks and Indian Runner Ducks.
Maude I. Matthews - Larimore, N. D.

Eggs for Hatching

Orpingtons.....White.....Buff
Rock.....White.....Buff
Wyandottes.....White.....Buff
Wyandottes.....Silver.....Golden
Also a few cockerels.

Write your wants. Book order early.
O. A. Barton, Valley City, N. D.

R C R I REDS Now is the time to buy breeding stock for next year.

I can sell you last year's hen and cock or this year's pullets and cockerels. Prices, \$1.00 to \$2.50 each. You must order early. I have 250 to pick from.

K. H. THOMTE - LISBON, N. D.

EGGS FOR HATCHING from pure bred Buff Orpingtons. \$1.50 for 15; \$2.50 for 30.
F. M. PEZALLA, - CAYUGA, N. D.

BARRED ROCK

Choice Stock and Fair Treatment.

ROBERT B. REED

Box 2.

Amenia, N. D.

BUFF WYANDOTTE EGGS for hatching. Fowls for sale. Also twelve breeds of Fancy Pigeons. M. B. NOBLE, Hillsboro, N. Dak.

BARRED ROCKS

Bred to Lay and Win

Won all first at Fargo, N. D. State Show, 1906, 1907, 1908, 1909 and 1911. Stock at reasonable prices

PETERSON BROS. Harwood, N. D.

HAUSMANN POULTRY FARM

Breeders of W. Wyandottes and S. C. W. Leghorns
Hillsboro, - North Dakota

E. A. TOW

Breeder of

White Wyandotte Chickens, Toulouse Geese, Bourbon Red Turkeys, Pearl and White Guineas. Eggs in season. Write for prices. Lisbon, N. D.

BRED FOR EGGS & MEAT

Bellevue Strains of White and Columbian Wyandottes, S. C. White Leghorns, and Liffht Brahmas. Stock for sale. Over 30 years in business.

MICHAEL L. BOYER, Box 17

Hammonth, Atlantic Co. New Jersey

EGGS FOR HATCHING. White Plymouth Rocks (Fishels Strain) \$5 per 15. I have the Best in the Northwest. No exceptions. Indian Runner Ducks from Choice High Bred Stock, \$2.50 per 11. Canadian Wild Geese, \$1 per egg.

C. H. McGEE

Oriska, N. Dak.

WHITE WYANDOTTES. If you want eggs from an early maturing, heavy laying, prize winning strain of White Wyandottes write me. I am developing a special laying strain by use of the trap nest. Prices reasonable. Write

M. C. JAMES, Valley City, N. D.

MAKE YOUR HENS LAY MORE EGGS

I have a method that will make your hens lay every day; it never fails. Write for it. 2c stamp.

MRS. B. F. WILCOXON,

Hillsdale, Wyo., Dept. 8

FOR SALE. M. B. Turkey Toms, raised from our Diploma Stock, \$5.00 and up; also Eggs from 26 varieties poultry. Catalog free.

L. GULDEN, Osakis, Minn.

Rose Comb Black Minorcas

Eggs for sale, \$2 for 15 eggs.

C. WYSH,

CASSETON, N. D.

SINGLE COMB BUFF ORPINGTON EGGS

\$1.00 per 15 or \$5.50 per 100 from my thoroughbred farm range flock. \$2.00 per 15 from my prize winning pen. Mrs. D. W. Swanson, New Rockford, N. D.

sown oats and peas, and sweet corn furnished the finest kind of pasture.

Matthieu, the cook of Cardinal de Rohan, was the first who suggested the use of liver of the goose for pies. In Europe the liver of the goose is much esteemed, which is sold to pie makers who make of it the well-known pies.

Clover is as much an egg producer as it is a producer of milk. It is rich in nitrogen and mineral matter. Having a high nutritive ratio, it is equal to barley, and almost as high as wheat. Its action is to extend the food ration, reduce the too-concentrated grain food, and prevent the accumulation of internal fat. The second crop, or "rowen" clover is the best. Clover should be cut when in full blossom. Let it grow until the first blossoms begin to turn brown.

Charcoal is an excellent corrective of the evils of injudicious over-feeding, and also is a good remedy in bowel disorders in poultry. Having wonderful absorbent powers, especially for gases, only a small quantity should be put in the feed hoppers at a time on account of its absorptive nature. It should be kept in a thoroly dry vessel with a close-fitting cover, so as to exclude the air. If charcoal is heated well before given to the poultry, it will have a tendency to drive all impurities which may have become absorbed, and will be equal to fresh charcoal.

In turkey culture, never use a gobbler that is akin to the hens. In-breeding is the cause of much of the "bad luck" in raising the young.

Ginger, if fed poultry for too long a time, is apt to weaken the digestive organs, while asafoetida and gentian are excellent digestive stimulants. Asafoetida, garlic and onions have a good effect on the lungs and bronchia.

When a fowl has a bilious look, dysentery and then costiveness, it is a strong indication that it is suffering from liver trouble. When the edges of the comb and wattles are of a purplish red, it is a sign of indigestion. Fowls in good health always have a bright red comb.

Before they sell the eggs received, commission men take them to a dark room where they are "candled." The egg is held in the left hand, before a strong light, and the top shaded with the right hand. If the air-cell is small, they know the egg is fresh. If the albumen is noted to be slightly thin and watery, and the air space larger than that of a fresh egg, it indicates a month old. If the albumen is still more watery, and the air space greatly enlarged, it is put down as two months old. About a month or two after that the air space

reaches about the center of the egg, and it is declared worthless.

Ducklings usually start to molt when eleven weeks of age, and it will require about six weeks for them to finish the process, and get into good condition again. For that reason ducklings should be marketed at ten weeks of age, for after that they are more apt to lose weight than gain it.

Eel grass, such as is found in the bottom of the creeks of Long Island, seems to be a natural food for ducks. Inland breeders substitute steeped clover hay or alfalfa, and some chop up green rye, oats or corn. Where there is a scarcity of green food, more bran must be fed in the ration.

Richardson, a former English authority, said the ideal gander has large dimensions, active gait, lively and clear eyes, an ever-ready and hoarse voice, and a demeanor of full boldness. The goose should be chosen for her weight of body, steadiness of deportment, and breadth of foot—a quality said to indicate the presence of other excellencies.

The age of a fowl cannot always be told by the size of spurs. In the yard of the writer there is a three-year old hen that could easily be mistaken for a pullet or yearling hen. But there is a dull, heavy look under the eyes of an old bird which an expert will detect at a glance. The best plan is to band all the birds and a record kept of their ages.

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RIGHT NOW AND FOR

Thanksgiving

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me for Special Price
List, Tags, and Best
Time to ship.

PAY HIGHEST MARKET PRICES
FOR

Poultry & Cream

CHARGE NO COMMISSION!

WRITE ME NOW

R. E. COBB
ST. PAUL, MINN.

School and Home

COUNTRY LIFE CONFERENCE G. W. Randlett, Agricultural College

The social aspect of country life in North Dakota has never been made the particular subject of any conference. That it represents a most unique and comprehensive problem cannot be questioned, for no state in the Union is so dependent upon agriculture as "Hiawatha's Land of the Dacotahs." It is not an uncommon thing to hear the elite of society discuss the crop situation, as well as the farmer, or the producer of crops. Everybody, Everywhere, Everyday in North Dakota talks agriculture. With a knowledge of the fact that a contented country folk is the basis of a permanent agriculture, the North Dakota Agricultural College thru its Extension Service has decided to lend its aid and support in calling a Country Life Conference the third week in December, beginning Tuesday, December Seventeenth and ending Friday, December Twentieth, Nineteen Hundred and Twelve. The conference will be held at the same time and in conjunction with the North North Dakota Boys' and Girls' Institute, thus giving the people who attend an opportunity to see what is being done in North Dakota to keep the boy and girl on the farm. The object of the conference is to bring together those who have been active in bettering social conditions in the country, to discuss the efficiency of institutions peculiarly rural in their character and to demonstrate with social features whenever possible. In other words, not only to talk, but "to do the thing (talked about) itself."

The Conference will last four days. The mornings of each day will be taken up entirely with the North Dakota Boys' and Girls' Institute programs, the afternoons with Conference discussions and the evenings with demonstrations. No pains will be spared to make the discussions instructive, the demonstrations interesting. The various programs will be built up around the three rural institutions—The Country School, The Country Church and The Country Home.

TUESDAY, DECEMBER SEVENTEENTH, will be called "COUNTRY SCHOOL day." The chief topic for discussion on that day will be—"THE COUNTRY SCHOOLHOUSE AS A SOCIAL CENTER." Subjects such as: How can the Rural School be Ruralized?—Is the Country School the Efficient Force it was Meant to Be—If not What Can Be Done to Make It Efficient? Is Consolidation Feasible in North Dakota?—

The School Teacher as a Community Leader—School Grounds—Schoolhouse Architecture—The Playground Movement in Rural Communities—The Country Literary Society—The Country School as a Farm Laboratory for Seed Testing—Milk and Butter Testing, Soils, etc.—The Country School as a Clearing House for the Exchange of Farmers' Opinions in Matters of National, State, Country and Community Interest—The Country School as a Community Fair Building—The Country School as a Neighborhood Center—The Country Schoolhouse as a Reference Library—The Country Schoolhouse as a Health Center—The Country Schoolhouse as a Local Art Gallery—The Country Schoolhouse as a Recreation Center—All will receive considerable attention. A Round Table for County Superintendents, Country School Teachers and Parents will be one of the features of the day.

A demonstration in the form of a genuine rural entertainment will close the festivities of Country School Day. A typical country band, made up entirely of country folk musicians will render a concert, after which an amateur play (the scene of which is laid in a rural community in North Dakota, written by a North Dakotan if possible) will be presented by farmers themselves.

WEDNESDAY, DECEMBER, EIGHTEENTH, will be called COUNTRY CHURCH AND CIVIC IMPROVEMENT DAY. The Church as a Community Builder, the Press, the Library and the Lecture Course as forces of civic improvement will be the chief topics for discussion. A Country Church social will be given in the evening, preceded by a country orchestra concert, a moving picture show and a humorous Lecture.

THURSDAY, DECEMBER NINETEENTH, has been designated as COUNTRY HOME & COUNTRY CLUB DAY. The Home as the Greatest Factor in Society will be discussed from practically every point of view. Concrete illustrations of an up-to-date modern country home will be on exhibition. The Farmers'

CALIFORNIA HONEY Sample 10c Leaflet free quoting prices freight prepaid. Agents wanted. Spencer Apiaries Co. Box 171 Nordhoff, California.

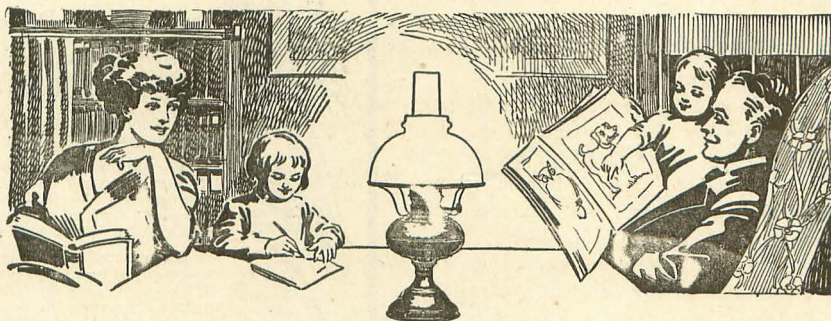
GREATEST MAGAZINE BARGAIN IN YEARS NORTH DAKOTA FARMER, Farm Journal (2 years), Farm Life—all for \$1.25. Catalogue FREE. A. Burger, 790 E. 181 St., N. Y. City.

The Engine for a Hundred Power Jobs

Small but powerful. Weight under 200 lbs. Take it wherever you have work to do. Easy to move, set, handle—simple and easy to manage. The kind of an engine farmers get real benefit from. THE FARM CUSHMAN, the original binder engine, is 4 cycle, 1 h. p. rating, but develops 5 h. p. Easy speed changes—you use gasoline according to work done, 1 to 10 h. p. Also 6-8 and 20 h. p. special heavy duty engines, for baling, ensilage cutting, etc. State size wanted. Book free.

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The Light for the Home

For reading—
use—the best lamp you can buy is the Rayo.

There is no glare; no flicker. The light is soft and clear. The Rayo is a low priced lamp, but you cannot get better light at **any** price. Rayo lamps are lighting more than three million homes.

Save the Children's Eyes—and Your Own.

The **Rayo** Lamp Lighted without removing chimney or shade. Easy to clean and rewick. Made in various styles and for all purposes.

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STANDARD OIL COMPANY
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Club and its peculiar function will be another interesting subject for discussion. At six o'clock a family style supper will be served to those in attendance at the Conference. A Farmers' Club program, the chief feature of which will be a debate, will be given in the evening.

FRIDAY, DECEMBER TWENTY-ETH, will be devoted to country life sports, field day and games.

While the conference is primarily for THE COUNTRY BOY and THE COUNTRY GIRL, THE COUNTRY MAN and THE COUNTRY WOMAN, anybody who is at all interested in the social betterment of the rural community will be welcomed. The object of the conference, as previously stated, is not only to discuss ways and means of how to socialize the country—to tell what can be done, but actually prove it by demonstration—to put theory into practice. This fact alone will make it one of the most notable Country Life Conferences ever held.

CHRISTMAS TREE SUPPLY UNAFFECTED

The Department of Agriculture has begun under the new federal plant quarantine law with relation to the gypsy moth and the brown-tailed moth. These hearings will be of particular interest because of the possible effect of stringent regulations on the Christmas tree trade. The moths have played havoc for the last decade with the trees of the New England states. There have been several narrow escapes from getting the insects transplanted to distant parts of the country, and the horticultural board wants to make domestic quarantine rules that will minimize the danger of infections from the gypsy moth zone.

There is a big interest to trade in Christmas trees from New England to the adjacent states, and if the shipping restrictions are enforced early in December the New England dealers will be seriously handicapped. It is hardly likely, however, that the quarantine regulations will be formulated before early in the spring.

Experts of the Bureau of Entomology of the Department of Agriculture say there is a good deal of material that may carry the moth infection—Christmas trees, lumber, railroad ties, as well as many sorts of nursery stock, may harbor the eggs or the moths in some stage of development.

Following the hearing on the gypsy moth there will be an immense amount of work for the horticultural board. There are about 6,000 nurserymen listed in the United States, and of these between 500 and 1,000 are actual importers of stock. All branches of the trade will have to be heard before any regulations affecting them are put in force, and it will mean a series of hearings, probably lasting all thru next summer.

CAMPAIGN FOR BIRD PROTECTION

The committee on wild life protection of the Fourth National Conservation Congress has inaugurated a nation-wide campaign to induce Congress at the coming session to enact a law for the federal protection of migratory birds. It is argued by the committee that the wanton destruction of insectivorous birds in the United States is partly responsible for the high cost of living. Among the birds sought to be protected by a federal law are song-birds, swallows, woodpeckers, blackbirds, quail, doves and nighthawks. Protection of game birds alone will not answer, it is pointed out.

Three measures for the protection of birds are now pending in Congress, their sponsors being Representative Weeks of Massachusetts, Representative Anthony of Kansas and Senator McLean of Connecticut. The Weeks and Anthony measures provide for the protection of migratory game birds only, but the McLean bill goes a step farther by including all migratory

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YOUR OPPORTUNITY

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SASKATCHEWAN Western Canada

Do you desire to get a Free Homestead of 160 Acres of that well known Wheat Land? The area is becoming more limited but no less valuable.

New Districts have recently been opened up for settlement, and into these railroads are now being built. The day will soon come when there will be no Free Homesteading land left.

A Swift Current, Saskatchewan farmer writes:—"I came here on my homestead, March, 1906, with about \$1000 worth of horses and machinery, and just \$35 in cash. Today I have 900 acres of wheat, 300 acres of oats, and 60 acres of flax." Not bad for six years, but only an instance of what may be done in Western Canada, in Manitoba, Saskatchewan or Alberta.

Send at once for Literature, Maps, Railway Rates, etc., to

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CLIFFORD BLOCK

Grand Forks, N. Dak.

or Address, Superintendent of Immigration
Ottawa, Ont., Canada



*These profits
belong to you!*

Stop and Consider This, You Men Who are Figuring on any Kind of Building or Repairing

It Is No Longer Necessary for You to Pay the
Profits of These Five Middlemen On

Lumber, Sash, Doors, Millwork, Hardware, Paint

Never before in the history of the lumber business has it been possible to buy building materials really from first hands. IT IS NOW. We owe allegiance to no combination. We sell to you DIRECT, and by "direct," we mean not from a wholesale yard or jobber's stock but DIRECT FROM OUR OWN TIMBER TRACTS AND MILLS.

We are owners of billions of feet of finest standing timber in the Northwest. We log it over our own railroad, cut it in our own mill, and ship it direct to the user. So you see that our statement that we can give you the most for your dollar is not an empty claim—there are facts and resources behind it.

Shrewd and careful builders seize every chance to save on their material—it's just like EARNING money because it's the one SURE way to save on building. It's SURE because it's simply a matter of keeping the middlemen's commission for YOURSELF by buying direct from the man who owns the resources.

You Can Reduce the Cost of Your Bldg. 25 to 50%

The difference in the cost of a house built from a local yard and from us has been a marvel to men buying their first bill from us. You can MAKE US PROVE OUR CASE TO YOU by sending for our big price list, or better still, send in your bill and let us estimate it for you. We will quote you a price DELIVERED TO YOUR STATION.

Our prompt shipments, high-quality materials and bargain prices will be an eye-opener to you.

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Coupon and
Mail
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Coupon

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First Ave.,
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I enclose stamps for
lumber list quoting
price laid down at my
station.

Name
Address
Occupation

STAVE
8-8-8
\$1.54
EACH

COLUMNS
CLEAR
FIR

2'8
6'8
5 GRASS
PANELS
\$1.20

CLEAR
FIR
CASING
1 1/4" PER
LIN. FT.

RED
CEDAR
BEVEL
SIDING
\$23.00

24
x
28
2 LT.
\$1.20

24
x
FIR
\$10.50
PER
MT.

SQUARE
COLUMNS
8-8-8
\$1.36
EACH

CLEAR
FIR
FLOORING
\$28.00

WASH. RED CEDAR
SHINGLES
CLEAR
\$20
5/8 CARLOAD
EXTRA
\$1.25

CLEAR
FIR
MOULDED
BASE 2 1/2
PER LIN. FT.

24x6 FIR
\$10.00
PER M.

insectivorous birds. This bill, according to William T. Hornaday, director of the New York Zoological Society and chairman of the committee, would be acceptable if placed on the federal statute books. It is proposed to bring pressure to bear on Congress by the citizens of every state in the interest of the passage of one of these bills.

SUCCESSOR TO DOCTOR WILEY

In all probability Dr. Carl L. Alsberg, now the chemical biologist of the poisonous plant laboratory of the Bureau of Plant Industry in the Department of Agriculture, will be the successor of Dr. Harvey W. Wiley as chief of the Bureau of Chemistry.

Dr. Alsberg is thirty-five years old and has a splendid reputation among scientists both in and out of the government service. He is a graduate of Columbia University and the College of Physicians and Surgeons. He also had a special course of training in chemistry in German universities. Dr. Alsberg was highly recommended to the President by scientists throughout the country.

SUPREME COURT EXAMINES 2-YEAR OLD EGGS

The United States Supreme Court gave its attention this week to 443 cans of eggs put up two years ago, and declared by officials of the food inspection bureau to be decomposed. Ralph S. Rounds, appearing for the claimants of the eggs informed the court that the case was the most important of any of the five pure food cases that have come to the attention of the court. Mr. Rounds stated that the law should be interpreted so as to give the word "decomposed" the meaning of "unwholesomely decomposed," and not according to the number of bacillus coli the product contains. They stated that eggs are divided into four grades: "current use," seconds," "chicks" and "spots."

"Do you mean to say there are four grades of strictly fresh eggs?" asked Justice Holmes.

"Oh, no," was the reply of Mr. Rounds.

Cancer in Plants

The recent announcement from the Department of Agriculture of the discovery of a similarity between crown galls and cancer in human beings, has caused wide discussion in the public press and among medical men. For five years Dr. Edwin F. Smith of the Bureau of Plant Industry has been hammering away at the idea that crown gall of plants resembles malignant human tumors and can be made to throw a flood of light on the origin of the latter. A year ago announcement

was made of the discovery of a tumor strand and of a stem structure in secondary tumors in leaves. This announcement received only a cool welcome at first, and now the Department of Agriculture will issue in a couple of weeks Bulletin No. 255 of the Bureau of Plant Industry on "The Structure and Development of Crown-Gall," in support of this new theory.

Dr. Smith has found that soon after the appearance of a primary tumor, particularly if the plant is well nourished and growing rapidly, tumor strands push out of it into the normal tissues, generally, it would seem, along lines of least resistance. Upon these roots secondary tumors develop, so that, when excisions are attempted, if any portion remains a new growth develops exactly as in human cancer. In addition these secondary tumors develop new root systems on which to grow other tumors.

The Bureau of Plant Industry has been able to isolate the organism which causes crown gall and by means of subcultures from single bacterial colonies Dr. Smith has been able to produce the tumor hundreds of times. Most of the experiments were made with daisy plants which were inoculated at about the same time, a foot or more above the earth, and all in the young, rapidly growing stems. All of the inoculations were made by needle pricks without hypodermic injection. All of the inoculated plants contracted the disease where pricked and not elsewhere, except as the result of invasions from the primary tumor.

The principal facts brought out by the investigation and described in the bulletin are that crown galls occur on a great va-

riety of plants, but not always on the crown as any part of the root or shoot is liable to attack. They are injurious to the plant in varying degrees, depending on the species, on the parts attacked, on the size and vigor of the individual, etc., but to a greater extent on young and rapidly growing plants. These galls are all of parasitic origin, a fact proven thru the



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We absolutely guarantee to you every "Perfection Brand" Fur Robe which you buy from your dealer. They are made of the finest imported skins. The leather is guaranteed color-proof. The linings are of the best material with our newly invented Wearproof Double-Stitched border. Every "Perfection Brand" Fur Robe is lock-stitch sewed and cannot tear. None genuine without signed Guarantee Bond and Silk Label shown above. *Insist* on the genuine; your dealer has or can get them for you. Accept no substitutes.

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If you want style and quality without extra cost, ask your dealer for Honorbilt Shoes. If not obtainable, write to us.

WARNING—Be sure and look for the Mayer name and trade mark on the sole.

We make Mayer Honorbilt Shoes in all styles for men, women and children; Drysox, Yerma Cushion Shoes, and Martha Washington Comfort Shoes.

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F. Mayer Boot & Shoe Co., Milwaukee.

ability of Department officials to isolate the parasite from 24 species of plants.

Officials of the Department believe that great light has been thrown on the human cancer problem thru these experiments, for if there is a specific organism causing a disease in plants which closely parallels cancer in its inception and manner of development then there is every reason to think that cancer in men and animals must also be due to some parasitic organism, upon the discovery of which a remedy may be conditioned.

CHRYSANTHEMUM SHOW A SUCCESS

An annual affair at the greenhouses of the Department of Agriculture is the chrysanthemum show. Each year some new varieties are shown, attracting considerable attention, while the older and better known sorts always have their admirers. But the little pompons and singles have almost as many adherents as their larger brothers. These smaller flowers of the daisy family have been cultivated into many curious shades and markings. One of the unnamed seedlings is a white flower freckled with pink. There were yellows and pinks and reds and buffs, solid and mixed hues, and of varied form and size. One large white and particularly robust flower was the center of attention, particularly because it was named Christy Mathewson. Then there was the Mrs. Taft, Mrs. Roosevelt and others equally well known.

At the close of the show Dr. Galloway, the chief of the Bureau of Plant Industry, distributed the blossoms to those individuals or institutions which showed the best title to them in regard to the use to which they were to be put, the majority going to the poor, the sick and the lonely—as far as the limits of the numbers of plants would permit. Many of the flowers found their way into the rooms of invalids in the hospitals and in the various charitable institutions of the city.

KITCHEN TRAVELS

A convenient arrangement of the kitchen can be made to reduce the work considerably. Mrs. John A. Widsøe of the Utah Agricultural College has done some figuring on this. She estimated the distance that had to be traveled in a year in getting the meals in a house that she moved into to be 125 miles. Later she had a kitchen which was arranged after her own plan, and in getting the same number of meals in this for a year the distance traveled was reduced to 57 miles. This is certainly quite an item and deserves a good deal of study. The distances that need to be considered are those from stove to dining table, from stove to sink, from dish cupboard to dining table, from sink to dining table, from work table and

Pantry to stove, from dish cupboard to stove and dining table. If this is given careful attention it will often be found that without very much re-arrangement these distances can be cut down a great deal.

EFFECT OF STORAGE ON SUGAR BEETS

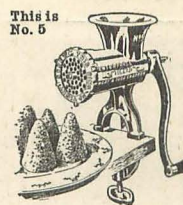
Foreign tests have shown that the losses of sugar in beets during storage are due in part to the absorption of large amounts of water, which dilute the juice, but mainly to the consumption of saccharose by the respiratory process of the beet. This latter loss, however, can not be prevented unless the vital processes of the beet are checked or destroyed, and this can only be accomplished by freezing or drying the beet at low temperatures.

After five years' test the Storrs (Conn.) Station has found that at 4 cents a quart, it is impossible to produce milk at a profit, even with a good herd, but at 5 cents a quart there will be a profit.

Get Beefsteak Prices For Your Sausage and other Pork Products—Use Enterprise Machines

Hog-raising farmers should take advantage of the big difference in market prices of pork products and hogs on the hoof. Fine country-cured sausage, such as you can make, brings about the same price as the choicest beefsteak. An Enterprise Meat AND Food Chopper and an Enterprise Sausage Stuffer and Lard Press are the profitable machines to use for any purpose. Great in the kitchen.

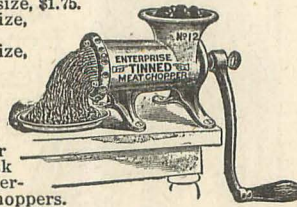
THE ENTERPRISE Meat AND Food Chopper



This is No. 5 cuts sausage meat slick and clean as the old-fashioned chopping knife—not the crushing and mangling, squeezing sort of chopper which is not a specially made meat chopper. It is the one chopper that gives the chopping cut—does not squeeze, mangle or crush. It is a chopper that will also give you almost daily use in the household. It enables you to make an unlimited number of dainty dishes from left-overs and bits of meat that otherwise would be wasted. Its use means not only better living, but economical food cost.

The Enterprise Meat AND Food Chopper has a four-bladed chopping knife which with the cutting plate gives nearly 300 cuts at every turn of the handle. Made in 45 sizes and styles, for hand, steam and electric power.

No. 5, family size, \$1.75.
No. 12, farm size, \$2.25.
No. 22, farm size, \$4.00.



These are the choppers we recommend. If you want cheaper machines, ask to see the Enterprise Food Choppers.

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For the Human Body—It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints.

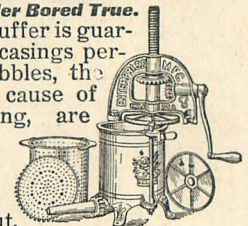
REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—“One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills.” OTTO A. BEYER.
Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet B. The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

The ENTERPRISE Sausage Stuffer and Lard Press Cylinder Bored True.

The Sausage Stuffer is guaranteed to stuff casings perfectly. Air bubbles, the most frequent cause of sausage spoiling, are wholly prevented from entering the casings by our patented corrugated spout, an attachment to be had only with the Enterprise. It is patented by us and cannot be used by other makers. Bear this in mind and do not be fooled by imitation spouts which lack the essential features of the Enterprise. A few “batches” of your fine sausage thus protected from spoiling will pay for these inexpensive machines several times over.

These sausage stuffers are made with greatest precision. Pressure plate fits close without binding. Meat cannot squeeze out. Many other exclusive points of merit, economy and convenience. Do not let butchering time come this year without one of these Enterprise Sausage Stuffers and Lard Presses with the patented corrugated spout to work with. The change to a lard or fruit press is instantly made. Nine sizes and styles—up to eight quarts capacity. One of these will fit your needs.



No. 25, 4-Quart, Japanned Price, \$5.00
Tinned and Japanned

THE ENTERPRISE MFG. CO. OF PENNA.
Dept 32., Philadelphia. Pa.

Seasonable Receipts

Boiled Leg of Mutton

Mutton, water, salt. Cut off the shank-bone, trim the knuckle, and wash and wipe it very clean; plunge it into sufficient boiling water to cover it; let it boil up, then draw the saucepan to the side of the stove, where it should remain till the finger can be borne in the water. Then place it sufficiently near the fire, that the water may gently simmer, and be very careful that it does not boil fast, or the meat will be hard. Skim well, add a little salt, and in about two and one quarter hours after the water begins to simmer, a moderate-sized leg of mutton will be done. Serve with carrots and mashed turnips, which may be boiled with the meat, and serve with caper sauce.

Beef Heart, Baked or Roasted

Cut a beef heart in two, take out the strings from the inside; wash it with warm water, rub the inside with pepper and salt, and fill it with a stuffing made of bread and butter moistened with water, and seasoned with pepper and salt, and, if liked, a sprig of thyme made fine; put it together and tie a string around it, rub the outside with pepper and salt; stick bits of butter on, then dredge flour over, and set it on a trivet, or muffin rings, in a dripping pan; put a pint of water in to baste with, then roast it in a hot oven; turn it around and baste frequently. One hour will roast or bake it; when done, take it up, cut a lemon in thin slices, and put it in the pan with a bit of butter; dredged in a teaspoonful of flour; let it brown; add a small teacup of boiling water, stir it smooth, and serve in a gravy tureen.

Baked Beans

For those who do not wish to use pork, the following is a good receipt:

Pick one quart of beans free from stones and dirt. Wash, and soak in cold water over night. In the morning pour off the water. Cover with hot water, put two pounds of corned beef with them, and boil until they begin to split open (the time depends upon the age of the beans, but it will be from thirty to sixty minutes). Turn them into the colander, and pour over them two or three quarts of cold water. Put about half of the beans in a deep earthen pot, then put in the beef, and finally the remainder of the beans. Mix one teaspoonful of mustard and one tablespoonful of molasses with a little water. Pour this over the beans, and then add boiling water to just cover. Bake slowly ten hours. Add a little water occasionally.

Jelly Sauce for Pudding

Melt one ounce of sugar and two table-spoons grape jelly over the fire in a half pint of boiling water, and stir into it half a teaspoon corn starch dissolved in a half cup cold water; let come to a boil, and it will be ready for use. Any other fruit jelly may be used instead of grape.

Hard Sauce

Beat to a cream a quarter of a pound of butter, add gradually a quarter of a pound of sugar; beat it until very white; add a little lemon juice, or grate nutmeg on top.

Mince Meat

(An Old Family Receipt)

Take five or six pounds scraggy beef—a neck piece will do—and put to boil in water enough to cover it; take off the scum that rises when it reaches the boiling point, add hot water from time to time until it is tender, then remove the lid from the pot, salt, let boil till almost dry, turning the meat over occasionally in the liquor, take from the fire, and let stand over night to get thoroly cold; pick bones, gristle, or stringy bits from the meat, chop very fine, mincing at the same time three pounds of nice beef suet; seed and cut four pounds raisins, wash and dry four pounds currants, slice thin a pound of citron, chop fine four quarts good cooking tart apples; put into a large pan together, add two ounces cinnamon, one of cloves, one of ginger, four nutmegs, the juice and grated rinds of two lemons, one table-spoon salt, one teaspoon pepper, and two pounds sugar. Put in a porcelain kettle one quart boiled cider, or, better still, one quart currant or grape juice (canned when grapes are turning from green to purple), one quart nice molasses or syrup, also a good lump of butter; let it come to boiling point, and pour over the ingredients in the pan after having first mixed them well, then mix again thoroly. Pack in jars and put in a cool place, and, when cold, pour molasses over the top an eighth of an inch in thickness, and cover tightly. This will keep two months. For baking, take some out of a jar; if not moist enough add a little hot water, and strew a few whole raisins over each pie. Instead of boiled beef, a beef's heart or roast meat may be used; and a good proportion for a few pies is one-third chopped meat and two-thirds apples, with a little suet, raisins, spices, butter, and salt.

Nut Bar

Three-fourths cupful butter, 1 cupful sugar, 2 cupfuls flour, one-half cupful

sweet milk, 3 eggs, 2 teaspoonfuls baking powder. Put eggs in last. Pour into buttered bread-pans one-quarter inch thick. Sprinkle chopped nuts, sugar and cinnamon on tops; bake 20 or 30 minutes.

Cocoanut Cups

One cupful sugar, 1 cupful milk, 1 egg and 1 tablespoonful butter. Beat well together, add vanilla, 2 cupfuls flour and 1 large teaspoonful baking powder. Mix into the batter one-half a grated cocoanut. Fill well buttered cups half full and steam 1 hour. Turn into deep saucers, surround with whipped cream, sprinkled with cocoanut. For a change use raisins instead of cocoanut, or a pint of fresh blueberries. With the latter add a little more flour. Hot liquid sauce is good, also.

Icy Windows

Windows may be kept free from ice and polished by rubbing the glass with a sponge dipped in alcohol.

Pounded Glass

Pounded glass, mixed with dry corn-meal, and placed within the reach of rats, it is said, will banish them from the premises; or sprinkle cayenne pepper in their holes.

Burns and Scalds

A burn or scald is always painful; but the pain can be instantly relieved by the use of bi-carbonate of soda, or common baking soda (saleratus). Put two table-spoonsful of soda in a half cup of water. Wet a piece of linen cloth in the solution and lay it on the burn. The pain will disappear as if by magic. If the burn is so deep that the skin has peeled off, dredge the dry soda directly on the part affected.

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